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DISEASES CAUSED BY BACTERIA AND FUNGI

WILLIAMS, R. E. O. & RIPPON, J. E. (1952). **Bacteriophage typing of** *Staphylococcus aureus.* — *J. Hyg., Camb.* **50,** 320-353. [Authors' summary modified.] **797**

The authors described the routine methods for progagation of staphylococcal typing bacteriophages, and for their use in identifying strains of staphylococci.

Most of the phages can be propagated in fluid media as well as on agar, and for some glucose-peptone-water is a better medium than nutrient or Todd-Hewitt broth. Many phage filtrates derived from broth or agar propagation contain, in addition to the phage, an agent that inhibits the growth of staphylococci.

Investigations of variations in the routine typing technique showed that considerable latitude is permissible in the age of cultures used for typing and in the inoculation procedures. It is, however, important to test all phage filtrates after propagation for purity and freedom from the inhibitory agent; and to repeat the tests frequently during use to detect alterations in titre.

About 40% of staphylococci are not lysed by the phages used at their test dilution; about half of these untypable strains are lysed by undiluted phage filtrates.

The authors gave details of analysis of the results of typing of staphylococci.

No method was discovered for segregating patterns into 'types', but conventions have been devised on the basis of the variation observed in sets of strains from various sources, for distinguishing between different patterns.

RICHOU, R., JACQUET, J., GERBEAUX, C. & JULIENNE, P. (1952). Sur les caractères et les propriétés des microcoques pyogènes isolés de la mamelle des bovidés. **[The characteristics of** *Staphylococcus pyogenes* **isolated from the udder of cows.]**—*Rev. Immunol.* **16,** 245-256. **798**

A study of the characteristics of staphylococci from the udders of cows, with a view to selection of the best methods for the diagnosis of pathogens. No one method by itself is sufficient although the coagulase test comes near to a 100% correlation with pathogenicity. An interesting point is the correlation between the titres of α and β-haemolysins; this led the authors to repudiate the current view that animal strains could be recognized by their production of β-haemolysin.—A. MAYR-HARTING.

RAMON, G., RICHOU, R., THIÉRY, J. P. & GERBEAUX, C. (1952). De l'influence des suspensions de colibacilles formolées (anavaccin) sur l'immunité engendrée par l'anatoxine staphylococcique. **[Influence of formolized suspensions of** *Bact. coli* **on the immunity produced by staphylococcal toxoid.]** — *Bull. Off. int. Epiz.* **37,** 228-232. **799**

Agents which act as immunity response stimulators have been found in aluminium derivatives, especially aluminium hydroxide. A mixture of heated formolized organisms and toxin, however, may act not only as a carrier for the toxin but also confer on the host some immunising response to the organisms comprising the vaccine. The titre of α- and β-staphylococcal antitoxin was higher with the mixture and the authors referred to the interest these results may have in milk production and infantile gastro-enteritis.—MALCOLM WOODBINE.

JACQUET, J., RICHOU, R., STEEG, L., GERBEAUX, C. & JULIENNE, P. (1952). Sur les caractères et les propriétés des microcoques pyogènes d'origine bovine. **[Character and properties of pyogenic micrococci of bovine**

NOTE.—*The* V.B. *references given in square brackets now refer to abstract numbers and not to page numbers.*

origin.]—*C. R. Acad. Sci., Paris.* **234,** 1920-1921. **800**

The authors found that coagulase production, mannitol fermentation, haemolysin formation, and gelatin liquefaction are the most important tests for recognizing pyogenic micrococci of bovine origin.—W. R. Bett.

Kahler, J. & Aicher, J. (1952). Der Galtstreptokokkus als Erreger einer ulzero-polypösen Endokarditis beim Menschen. [*Str. agalactiae* **causing endocarditis in man.**]—*Zbl. allg. Path. path. Anat.* **88,** 312-317. **801**

The authors reported a case of ulcero-polypoid endocarditis of the aortic valves, in which at P.M. examination β-haemolytic *Str. agalactiae* were isolated from the valve thrombi and from the spleen.—W. R. Bett.

Vinzent, R., Prévot, A.-R. & Thouvenot, H. (1952). Recherches sur le type respiratoire de *Vibrio foetus.* [**Oxygen requirements of** *V. fetus.*]—*Ann. Inst. Pasteur.* **83,** 266-268. **802**

Nine strains of *V. fetus* were grown in deep deoxygenated gelatin containing 0.2% glucose. Five were microaerophilic, one was strictly anaerobic and three were aerobic.

—E. G. White.

McBee, L. A. (1952). **A hitherto undescribed organism infective for deer mice.**—*Thesis, Cornell.* pp. 27. **803**

From 4 of 8 deer mice (*Peromyscus*) captured in New Jersey, a cocco-bacilliform organism was cultivated in the yolk sacs of embryonated hens' eggs and in cell-free media that contained high concentrations of serum. This organism was not found in deer mice captured on Grosse Isle, Canada, or in the vicinity of Ithaca, New York. When inoculated into deer mice parenterally, it produced an inapparent infection of long duration, but was not transmitted by cage or intra-uterine contact.

The presence of dog ticks on the ears of infected deer mice from New Jersey, absence of ticks on deer mice captured from the two other localities, and failure to transmit the infection by cage or intra-uterine contact gave presumptive evidence that ticks act as insect vectors for this agent.

No attempt has been made to classify the organism.—H. L. Gilman.

Mazzucchi, M. (1951). La vaccinazione anticarbonchiosa con l'impiego di glucosidi nel primo ventennio di applicazione. [**A review of vaccination against anthrax using glucoside vaccines.**] — *Clin. vet., Milano.* **74,** 109-118. **804**

An historical account of the anthrax saponin vaccine, with suggestions for its improvement and a discussion of its value.—M. Bertani.

Lesbouyries, G. & Lagneau, F. (1952). Tuberculose du testicule, de ses enveloppes et du canal déférent chez le taureau. [**TB. of the testicle in the bull.**]—*Rec. Méd. vét.* **128,** 597-616. **805**

An account of TB. of the testicle in bulls with particular reference to clinical manifestations, origin, diagnosis and P.M. findings. Two cases were described in detail.—G. V. Laugier.

Fust, B. & Studer, A. (1952). Nierentuberkulose beim Meerschweinchen. [**TB. of the kidneys in g. pigs.**]—*Schweiz. Z. allg. Path.* **15,** 427-432. **806**

In g. pigs infected s/c and i/p with human and bovine-type tubercle bacilli, the kidneys occasionally show macro- or microscopic focal changes, the specific nature of which is confirmed by histological and bacteriological examination and by successful treatment with isonicotinic acid derivatives.—W. R. Bett.

Iland, C. N., Symmers, St. C. & Thomson, A. P. D. (1951). **A note on tuberculosis in the ferret** (*Mustela furo* **L.**)—*J. Path. Bact.* **63,** 554-556. **807**

TB. lesions found in a female ferret five days after onset of illness were primarily abdominal. Histologically, the features were a histiocytosis and a profusion of the bacilli. In a second ferret injected with the strain isolated a considerable enlargement of the spleen and of the liver was demonstrable P.M., aggregates of histiocytes containing bacilli being present in the lesions.—W. J. B. Morgan.

Götze, R. (1952). Über die Grundlagen der Tuberkulosebekämpfung beim Rind und die Fehler bei ihrer Durchführung. Zugleich eine Stellungnahme zum Artikel von A. Bölken: Sind wir in der Bekämpfung der Rindertuberkulose auf dem richtigen Weg? Mitt. f.d. Landw. 1951, S. 493. [**Errors made in the control of TB. in cattle.**]—*Mh. prakt. Tierheilk.* **4,** 126-135. **808**

A discussion on the value of the tuberculin test for the control of TB. with emphasis on the action of this test when carried out according to recognized procedures.

Rubacher, K. (1949). Das histologische Bild von Impfstelle und regionären Lymphknoten bei experimenteller subkutaner Infektion und Reinfektion mit Tuberkelbazillen (B.K.) beim Rinde. [**The histological picture of the site of inoculation and the regional lymph nodes after experimental subcutaneous infection and**

re-infection of cattle with *Mycobact. tuberculosis.*]—*Schweiz. Z. Path.* 12, 400-432. [English, French and Italian summaries.] 809

R. described the histopathology of lesions in cattle inoculated subcutaneously with strain P of *M. tuberculosis* (a strain repeatedly grown in potato broth and of reduced virulence for g. pigs and rabbits). Inoculated tuberculin-negative calves developed a tuberculous primary complex and subsequent resistance to subcutaneous inoculation with a virulent bovine strain. Whereas control animals inoculated with the virulent organism developed a generalised infection, animals previously inoculated with strain P developed lesions which remained localised to the skin and regional lymph nodes. —E. G. WHITE.

LUCAS, A., ANDRAL, L., BOULEY, G., PARAF, A. & QUINCHON, C. (1951). Prophylaxie de la tuberculose bovine. Procédée de l'intradermo-tuberculination seconde. Importance de la tuberculine utilisée. Contrôle de la tuberculine et de ses modes d'utilisation et de lecture. **[The intradermal tuberculin test; type of tuberculin used and standardization of the test.]**—*Bull. Off. int. Epiz.* 35, 472-485. 810

A general account of the subcaudal intradermal tuberculin test.—G. V. LAUGIER.

KOURILSKY, R. & COULAUD, E. (1952). Effets des réinfections tuberculeuses sur l'allergie tuberculinique du cobaye. **[Effect of re-infections on tuberculin sensitivity in g. pigs.]** —*C. R. Soc. Biol., Paris.* 146, 197-198. 811

In the g. pig re-infections by s/c injections of killed tubercle bacilli decrease tuberculin sensitivity and weaken the allergic state. The latter, once re-infection is suspended, regains its former intensity after this delay. —W. R. BETT.

PALMER, C. E. (1952). **B.C.G. vaccination and tuberculin allergy.**—*Lancet.* 262, 935-940. 812

P. briefly discussed pre- and post-vaccination allergy and described the variations in the technique of intradermal injections. Exposure to sunlight has a devastating effect on B.C.G. vaccine, which may explain the unexpected results of vaccination projects throughout the world.

Though B.C.G. is the most promising and most acceptable immunizing agent available, many traditional concepts may have to be discarded.—W. R. BETT.

KOURILSKY, R. & DECROIX, G. (1952). Transfert intradermique de la réaction tuberculinique chez un animal non allergique, au moyen de broyats de rate et de foie. **[Tuberculin reaction in a non-sensitized animal produced by injection of suspensions of liver and spleen from a sensitized animal mixed with tuberculin.]**—*C. R. Soc. Biol., Paris.* 146, 687-688. 813

A mixture of tuberculin and spleen or liver extracts from sensitized g. pigs produced typical tuberculin reactions when inoculated intradermally into healthy g. pigs.—A. B. PATERSON.

GASTINEL, P. & NEVOT, A. (1952). Contribution à l'étude du rôle du beurre, de l'huile de colza et de l'huile de vaseline associés à des bacilles tuberculeux vivants ou morts, inoculés au cobaye par les voies sous-cutanée et testiculaire. **[Injection of *Mycobacterium tuberculosis* with various oily substances into g. pigs.]** — *Ann. Inst. Pasteur.* 82, 425-432. 814

Such substances as rape-seed oil and vaseline (soft paraffin) injected intratesticularly into g. pigs at the same time as living virulent tubercle bacilli do not appreciably change the pathogenicity of the micro-organisms. Butter, however, enhances it.—W. R. BETT.

POTHMANN, F.-J. (1950). Der Einfluss von Naturhonig auf das Wachstum der Tb.-Bakterien. **[Influence of honey on growth of tubercle bacilli.]**—*Z. Hyg. InfektKr.* 130, 468-484. 815

Honey contains inhibins, which are more effective against bovine type strains than against the human type, and do not influence non-pathogenic mycobacteria.—W. R. BETT.

GERNEZ-RIEUX, C., SÉVIN, A. & CHÉNET, C. (1949). Sur la streptomycino-sensibilité des bacilles tuberculeux et sur différents procédés proposés pour son étude *in vitro* et *in vivo*. **[Sensitivity of tubercle bacilli to streptomycin *in vivo* and *in vitro*.]**—*Ann. Inst. Pasteur, Lille.* 2, 57-92. 816

The authors discussed the results obtained with different techniques in determination of the streptomycin sensitivity of 250 strains of tubercle bacilli. They described a method of *in vivo* determination, based on the inhibitory action of streptomycin on lesions induced by intradermal inoculation into g. pigs or i/p inoculation into mice of the bacilli to be studied. The results can be read in ten days, and conform with the clinical observations.—W. R. BETT.

MUDD, S., WINTERSCHEID, L. C., DELAMATER, E. D. & HENDERSON, H. J. (1951). **Evidence suggesting that the granules of mycobacteria are mitochondria.**—*J. Bact.* 62, 459-475. 817

The authors found that the granules of

mycobacteria possessed the enzymatic, tinctorial and morphological characteristics of mitochondria. This is stated to be the first definitive recognition of mitochondria in bacteria.

—E. A. GIBSON.

KÖLBEL, H. (1951). Untersuchungen am Mycobacterium tuberculosis. I. Säurefestigkeit, Vermehrung und Granulation. **[Research on *M. tuberculosis*. I. Acid-fastness, multiplication and granulation.]**—*Z. Hyg. InfektKr.* **133,** 45-57. **818**

Acid-fastness is determined by the high content of plasma-bound lipoids. Multiplication takes place by growth in length with transverse division of homogeneous bacilli, and by branching of granular forms. Granulation represents a reaction against unfavourable environmental factors.—W. R. BETT.

OWEN, C. A., JR., KARLSON, A. G. & ZELLER, E. A. (1951). **Enzymology of tubercle bacilli and other mycobacteria. V. Influence of streptomycin and other basic substances on the diamine oxidase of various bacteria.**—*J. Bact.* **62,** 53-62. **819**

The diamine oxidase of acid-fast bacteria is inhibited by streptomycin, dihydrostreptomycin, other antibiotics and synthetic amines. Growth of the bacteria is likewise inhibited.

—L. M. JONES.

STEVENS, A. J. & SOLTYS, M. A. (1952). **Preservatives for milks containing *Mycobacterium tuberculosis*.** — *Vet. Rec.* **64,** 139 - 142. [Authors' summary slightly modified.] **820**

The bacteriostatic effect of 2% borax, 2% sodium carbonate, 2% dettol, 0·1% sodium hypochlorite, 0·1% brilliant green and 0·1% cetavlon was examined against Gram-positive and Gram-negative organisms in milk, in order to find the most suitable preservative for milk samples examined for the presence of tubercle bacilli.

Borax diluted in 2% concentration in the milk sample was the most suitable preservative for milk containing tubercle bacilli, provided that the milk sample containing borax was inoculated into g. pigs within four weeks.

ROEMMELE, O. (1952). Rotlauf-Endokarditis bei Schlachtrindern. **[*Erysipelothrix rhusiopathiae* endocarditis in slaughter cattle.]**—*LebensmTierarzt.* **3,** 43-45. **821**

R. described two cases of endocarditis due to *E. rhusiopathiae* in cattle, the whole of the endocardium of the right ventricle being affected. He commented on this difference from the condition as it occurs in swine in which the lesions are restricted to the valves.

—A. MAYR-HARTING.

GOERTTLER, V. (1952). Impfrotlauf in Thüringen im Jahre 1949. **[Outbreaks of swine erysipelas following immunization in Thuringia in 1949.]**—*Mh. Vet.-Med.* **7,** 81-88. **822**

A survey of immunization of pigs against swine erysipelas, with separate statistics from various districts. Of a total of 232,186 animals immunized by simultaneous injection of culture and antiserum, 1·4% developed swine erysipelas within a fortnight, and 0·23% died. Of 66,150 animals immunized with adsorbate vaccine, 1·07% developed the disease within 14 days and 0·23% died.—A. MAYR-HARTING.

FLÜCKIGER, G. (1952). Il mal rossino dei suini ed i differenti metodi di vaccinazione preventiva. **[Methods of immunization against swine erysipelas.]** — *Profilassi.* **25,** 65-69. [French summary.] **823**

A general discussion on the subject.

—R. G. MARES.

FRITSCHE, K. & RADTKE, W. (1951). Zur Frage der Identität der sog. Wild- und Rinderseuche und der infektiösen Bronchitis des Rindes. **[Haemorrhagic septicaemia and infectious broncho-pneumonia of cattle.]**—*Mh. prakt. Tierheilk.* **3,** 283-296. **824**

From a consideration of the occurrence and pathogenicity of bipolar organisms and from the study of outbreaks of infectious broncho-pneumonia in cattle in Germany, the authors concluded that a pneumotropic virus is the exciting cause, the bipolar organisms being secondary invaders. They suggested that the term haemorrhagic septicaemia should be abandoned, a more suitable name for the condition being cattle influenza.—J. A. NICHOLSON.

BEZJAK, V. & MIMICA, M. (1952). **Two human infections caused by *Pasteurella multocida*.**—*Brit. med. J.* Oct. 4th, 757-758. **825**

Infection by *Past. multocida* is rarely diagnosed in man. The authors reported two cases, one of bronchiectasis and another of maxillary sinusitis, from which almost identical strains of *Past. multocida* were obtained.—W. R. BETT.

KEMÉNY, A. (1951). Sinusite infectieuse des oies. **[Infectious sinusitis of geese.]**—*Acta vet. hung.* **1,** 197-204. [In French. Russian summary.] **826**

Haemophilus gallinarum was isolated from the swollen infra-orbital sinuses of infected

geese. Healthy geese inoculated in the infra-orbital sinus with the culture developed similar swellings, though ducks and certain other birds, similarly inoculated, remained healthy.—A.S.

LEISTNER, W. (1952). Ein weiterer kasuistischer Beitrag zur intravitalen Fleischinfektion mit Bact. paratyphi B Schottmüller beim Pferd. [*Salmonella paratyphi B* **infection in the horse.**]—*Tierärztl. Umsch.* **7,** 206-207. **827**

L. described fatal infection of a horse with *S. paratyphi B*. P.M. examination was carried out on the day of death and the organisms were isolated from the liver, spleen and kidneys.

—A. MAYR-HARTING.

HENNING, M. W. (1952). **A preliminary report on the therapeutic value of chloromycetin for the treatment of calf paratyphoid.** (*Salmonella dublin* **infection**).—*J. S. Afr. vet. med. Ass.* **23,** 86-87. **828**

Five artificially infected calves injected s/c with chloramphenicol for 3 days recovered more quickly than 5 untreated controls—one of which died—but excreted *S. dublin* for a longer period than the 4 controls which recovered.

—E. A. GIBSON.

DE BLIECK, L. & MARTHEDAL, H. E. (1952). **Investigations concerning the feeding of chickens with Ratin in relation to the B.W.D. test.**—*Vet. Rec.* **64,** 815-817. **829**

Investigation showed that ingestion of the "Ratin organism" (*S. enteritidis* var. *danysz*) in broth caused fowls to produce antibodies leading to false positive reactions in the tube agglutination test for *S. pullorum* infection. When this product was withdrawn these antibodies disappeared from the blood within 8 weeks; the authors suggested that poultry-keepers should cease the use of Ratin 2-3 months before birds are tested.—A.S.

GEISSLER, H. (1952). Die Einwirkung der Infrarotstrahlen auf eine Infektion mit Salmonella gallinarum pullorum (Pullorum-Infektion). [**Effect of infra-red rays on** *S. pullorum* **infection.**]—*Dtsch. tierärztl. Wschr.* **59,** 274-276. **830**

Chickens, fed with *S. pullorum,* showed higher resistance to infection if kept under an infra-red lamp. [No statistical analysis to show that the figures were significant.]

—A. MAYR-HARTING.

BEGANOVIĆ, A. H. & TOPOLNIK, E. (1951). Dijagnostika i diferencijacija S. pullorum i S. gallinarum pomoću bakteriofaga. [**Diagnosis and differentiation of** *S. pullorum* **and** *S. gallinarum* **by bacteriophage.**] — *Vet. Arhiv.* **21,** 548-553. [French summary.] **831**

S. gallinarum can be differentiated from *S. pullorum* by the use of bacteriophages (*c* and *d*) specific for *S. gallinarum*. They were active up to the critical dilution (10^{-5}) and only against *S. gallinarum*.—I. MARTINI.

MILLER, A. A. (1952). **Human** *Salmonella typhi murium* **infection due to duck eggs with special reference to flocks of ducks.**—*Brit. med. J.* July 19th, 125-127. [Author's summary slightly modified.] **832**

The investigations which followed two severe and two fatal cases in human beings of *S. typhi-murium* infection, attributable to the eating of duck eggs, are reported. In the first and second cases the incriminated eggs were successfully traced to two flocks of ducks. The flock to which the third egg was traced was the probable source, but the attempt to trace the source of infection in the fourth case was unsuccessful.

In the first infection the same Vi phage type of *S. typhi-murium* was isolated from two out of nine eggs laid by six ducks, and from the ovary of one duck, from the intestinal tract of a second duck, and from both the ovary and the intestinal tract of a third duck—these composing the flock from which the suspected egg was obtained. The agglutinating titres showed that five out of six ducks were positive reactors.

In the second investigation *S. typhi-murium* Vi phage Type 4 was isolated from the patient, from the farmer and his sister, and also from one cloacal swab obtained from the flock of ducks to which the suspected egg was traced. Practically all the ducks in this flock were positive reactors.

CLARENBURG, A., VINK, H. H. & NOORDHOFF, B. C. (1950). Infectie met *Salmonella saint-paul* in verband met salmonellosis bij eenden. [**Infection with** *S. saint-paul* **in connexion with Salmonella infection in ducks.**]—*Ned. Tijdschr. Geneesk.* **94,** 1615-1618. [Abst. from English summary.] **833**

C. reported *S. saint-paul* infection characterized by gastro-enteritis with a course of 12 days in a woman. A sister of the patient contracted the infection by contact with her. The infection was traced to duck eggs.

CASELITZ, F. H. (1951). Ultraschall-Wirkung bei Bakterien der Salmonella-Gruppe. [**Effect of ultrasonic waves on bacteria of the** *Salmonella* **group.**]—*Z. Hyg. InfektKr.* **133,** 113-121. **834**

Ultrasonic waves exert a destructive action

on bacteria of the *Salmonella* group, first on the flagella and finally on the body. They do not always produce complete reorganization of the antigenic structure. O-non-agglutinable typhoid strains become O-agglutinable.—W. R. Bett.

Rossi, P. & Dutilloy, Y. (1951). Brucellose et lacto-agglutination. **[The whey agglutination test in brucellosis.]**—*Bull. Acad. vét. Fr.* **24,** 415-421. **835**

A note comparing whey and serum agglutination tests.—G. V. Laugier.

Urfer, J.-P. (1951). Influence de l'âge, du sexe et de la castration dans l'infection de Brucella abortus. **[Influence of age, sex and castration on *Br. abortus* infection.]**—*Schweiz. Arch. Tierheilk.* **93,** 564-584 & 632-653. [In French. English, German and Italian summaries.] **836**

To explain the resistance of young animals, particularly calves, to brucellosis it has been assumed that the physiological changes which bring about sexual maturity create a disposition for the infection. G. pigs were infected i/p. Of a first series of nine castrated males and five spayed females, six and four respectively became infected whereas all of five entire males and five entire females became infected. In a second series of 28 castrated males 19 became infected; of 30 entire males 21 became infected.

In each experiment additional groups of castrated males received testosterone. In animals so treated there was a slightly increased resistance.—W. Steck.

Braun, W., Goodlow, R. J., Kraft, M., Altenbern, R. & Mead, D. (1951). **The effects of metabolites upon interactions between variants in mixed *Brucella abortus* populations.**—*J. Bact.* **62,** 45-52. **837**

After a certain period of growth, mixed smooth and rough cultures of brucella attain a population equilibrium attributed to the rate of alanine production by the different variants and their respective resistance to the inhibitory effects of alanine.—L. M. Jones.

Maubecin, R. A. & Morán, B. L. (1952). Brucellosis caprina en la provincia de Córdoba. **[Brucellosis in goats in Argentina.]**—*Gac. Vet., B. Aires.* **14,** No. 75. pp. 26-35. **838**

Of 3,142 goats examined serologically, 18·5% showed evidence of brucellosis. Some animals had the symptoms and lesions of chronic brucellosis although reacting negatively to the agglutination test. There was a high rate of brucellosis among in-contact owners and attendants.—I. W. Jennings.

Manthei, C. A., Mingle, C. K. & Carter, R. W. (1952). ***Brucella suis* infection in suckling and weanling pigs. I.**—*J. Amer. vet. med. Ass.* **121,** 373-382. **839**

The offspring of sows (Group A) with subacute brucellosis showed a much higher percentage of infection than did the offspring of sows (Group B) with chronic infection. In addition serum titres in the offspring of Group A were higher than those from Group B. The evidence suggested that the infection was transmitted by contact from infected gilts to susceptible gilts. Sows infected after 5 months of age are more likely to develop chronic brucellosis than those affected before weaning. An agglutination titre of 1:25 should be considered significant. A bacteraemia occurred most commonly at the time of weaning and up to one month later. Details of the course of the infection in both groups were given in tabular form.—D. Luke.

Sippel, W. L., Boyer, C. I., Jr. & Chambers, E. E. (1952). **Bovine leptospirosis in Georgia.**—*J. Amer. vet. med. Ass.* **120,** 278-282. **840**

Infection with *L. pomona* was diagnosed as the cause of an outbreak of disease in a herd of Hereford cattle. Symptoms included abortion, icterus and haemoglobinuria. The authors briefly discussed diagnosis, treatment and control.—C. C. Bannatyne.

Simmons, G. C., Lawrence, J. J. & Forbes, B. R. V. (1952). **The identification of *Leptospira pomona* isolated from calves in Queensland.**—*Aust. vet. J.* **28,** 227-228. **841**

Two strains of *Leptospira* isolated from outbreaks in calves in Queensland were identified as *L. pomona* by means of agglutinin-absorption.—D. F. Stewart.

Lawrence, J. J. (1952). **Toxicity of methylene blue to *Leptospira icterohaemorrhagiae*.** [Correspondence.] — *Nature, Lond.* **170,** 327-328. **842**

L. icterohaemorrhagiae organisms were rapidly killed *in vitro* by a concentration of 2 μg./ml. methylene blue; however, *in vivo*, doses of 10 μg./g. injected i/p on two successive days failed to protect g. pigs infected with the same virulent strain.—A. B. Paterson.

Lamanna, C. & Lowenthal, J. P. (1951). **The lack of identity between hemagglutinin and the toxin of type A botulinal organism.**—*J. Bact.* **61,** 751-752. **843**

The haemagglutinin and the toxin appear to be separate components, but it is suggested that under certain conditions they may form stable complexes.—E. A. Gibson.

MENGES, R. W. (1951). **Canine histoplasmosis.** —*J. Amer. vet. med. Ass.* **119,** 411-415. **844**

A general review of *Histoplasma capsulatum* infection in dogs.—CLIVE BRIGGS.

TAUSON, T. A. (1950). **[The physiology of *Actinomyces*. (A review.)]**—*Mikrobiologiya, Moscow.* **19,** 557-574. **845**

A general review of the history of research on the nutrition, metabolism and production of antibiotics by *Actinomyces*.—F.A.A.

MACCABE, A. F. & KING, H. K. (1951). **The growth-promoting action of mucin.**—*J. Path. Bact.* **63,** 756-758. **846**

Growth of *Corynebacterium diphtheriae, Neisseria gonorrhoeae* and *N. intracellularis* is markedly increased, and that of some other bacteria slightly increased in the presence of hog gastric mucin.—P. H. HERBERT.

See also absts. **988** (salmonellosis in calves); **1059** (enzootic sterility and *V. fetus*); **1080** (staining of tubercle bacilli); **1081** (estimation of bacterial densities); **1086** (report, Lister Institute); **1088** (report, Veterinary Research Division); **1090** (report, Australia); **1093** (report, Pakistan); **1098** (report, Gambia Colony); **1101** (report, U.S.A.); **1102** (book, bovine type TB. in man); **1103** (annual review of microbiology); **1104** (book, medical mycology).

DISEASES CAUSED BY PROTOZOAN PARASITES

CAMPBELL, R. W. H. (1950). **Gambia. Trypanosomiasis and tsetse in the Gambia: including recommendations for tsetse control and auxiliary development in part of the Upper River.** pp. 68. London: Colonial Office. [Mimeographed.] **847**

Trypanosomiasis in cattle is endemic in the Gambia and only the local dwarf cattle can survive. Because mass treatment is impracticable, elimination of the vectors, mainly *Glossina palpalis* and *G. morsitans,* is recommended. Bush clearing and game eradication, particularly the killing of baboons, are the main methods of such elimination.—JAS. O'SULLIVAN.

FIENNES, R. N. T.-W. (1952). **Trypanosome infections of cattle—diagnosis by blood examinations when parasites are rare.**—*Vet. Rec.* **64,** 733. [Abst. from author's summary.] **848**

The thick smear method was at least 120 times more effective than the thin smear method; the latter was not effective in detecting scanty infections.

UNSWORTH, K. (1951). **Observations on the use of antrycide as a prophylactic against bovine trypanosomiasis in British West Africa.** —*Bull. Bur. interafr. Tsetse. Int. sci. Comm. Trypanosomiasis Res. Works and Final Report of the 3rd Session held at Bobo-Dioulasso Upper Volta* 11-16*th June* 1951. B.P.I.T.T. No. 165/0. pp. 12. [Mimeographed.] **849**

After completing extensive trials with antrycide pro-salt (a mixture of the methyl sulphate and the chloride) on indigenous West African cattle, the author concluded that the use of this prophylactic at 3 months' interval affords a definite protection when the level of infection is relatively low. It does not confer complete protection however when the infection index is higher and there are indications that antrycide-resistant strains may develop in these conditions. To obviate these drawbacks, the author suggested that the intervals between inoculations be reduced to no more than 6 weeks.

The use of antrycide pro-salt is indicated to protect cattle against trypanosomiasis when in transit through tsetse areas or when staying for short periods in heavily infested regions. Great care must be exercised when the exposure period exceeds 2 months.—J.D.

GOODWIN, L. G. & UNSWORTH, K. (1951). **Field trials with new phenanthridinium compounds.** —*Bull. Bur. interafr. Tsetse. Int. sci. Comm. Trypanosomiasis Res. Works and Final Report of the 3rd Session held at Bobo-Dioulasso Upper Volta* 11-16*th June* 1951. B.P.I.T.T. No. 166/0. pp. 2. [Mimeographed.] **850**

Four new phenanthridinium compounds were tested against *T. vivax* infection in zebu cattle; two of these appear to have a certain therapeutic value: 150C47 [2-7-diamino-9-*p*-aminophenyl-10-methyl-phenanthridinium chloride] and 621C47 [2-7-diamino-9-thienyl-10-methyl-phenanthridinium bromide].

150C47 was also used as a prophylactic at a dosage of 3 mg./kg., but a delayed toxicity developed after 5 weeks, with resulting death from liver damage in 10 of the 13 inoculated cattle. —J.D.

ANON. (1952). **Suramin (Bayer 205) in animal tissues. Demonstration of Bayer 205 (suramin) in tissues and its cellular distribution.**— *Nature, Lond.* **170,** 567-568. **851**

Cytoplasm containing suramin is stained deep violet with methylene blue eosinate which makes it possible to determine the distribution of suramin in the tissues. The drug behaves in the organism similarly to the vital acid dyes and is ingested by reticulo-endothelial cells in which it accumulates in granules. It also appears in the proximal tubules of the kidney. Since suramin is bound to the plasma proteins, it is con-

cluded that a certain amount of plasma protein must escape continuously through the glomeruli and be reabsorbed by the tubules.

—J. A. NICHOLSON.

RYLEY, J. F. (1951). **Studies on the metabolism of the protozoa. I. Metabolism of the parasitic flagellate, *Trypanosoma lewisi*.**—*Biochem. J.* 49, 577-585. 852

The aerobic metabolism of *T. lewisi* depends on the cytochrome system, the respiration being reduced by cyanide and inhibited by CO_2. 2-4 Dinitrophenol and cyanide reversibly stopped mobility. The immobility produced by iodoacetate was irreversible.

Pyruvate and CO_2 increased anaerobic metabolism, but it was decreased by dipyridyl and 8- hydroxyquinoline.

—JAMES G. O'SULLIVAN.

CVJETANOVIĆ, V. (1951). Dijagnostička vrijednost formol gel probe kod leišmanioze pasa. **[Diagnostic value of the formol gel test in *Leishmania* infection in dogs.]**—*Vet. Arhiv.* 21, 405-415. [In Croat. Abst. from English summary.] 853

172 dogs were examined with the formol gel test. Of 14 positive results, the parasite was demonstrable microscopically in 12; the parasite was not present in 26 negative dogs from areas where the disease occurred.

—JOHN SEAMER.

FITZGERALD, P. R., HAMMOND, D. M., MINER, M. L. & BINNS, W. (1952). **Relative efficacy of various methods of obtaining preputial samples for diagnosis of trichomoniasis in bulls.**—*Amer. J. vet. Res.* 13, 452-457. [Abst. from authors' summary.] 854

The authors stated that the douche method was more efficacious than the pipette or swab method for obtaining preputial samples for the laboratory diagnosis of bovine trichomoniasis. The pipette method is more efficacious than the swab method and should be used when samples must be examined in the field.

ABELEIN, R. & GÜNZLER, O. (1952). Das Aktivon-Verfahren zur kulturellen Diagnose der Trichomonadeninfektion beim Bullen. **[The " activon " method of culture diagnosis of *Trichomonas* infection in bulls.]**—*Tierarztl. Umsch.* 7, 5-13. 855

The technique and materials required for the collection of preputial washings were described and the results compared of examination for trichomonads by direct microscopy and by culture, using "activon"—a dry enrichment substance.—M. L. CLARKE.

WATANABE, M. (1952). Les antibiotiques dans la lutte contre les maladies infectieuses et en particulier de la trichocidine. **[Antibiotics, especially trichocidin, in treatment of infectious diseases of animals.]**—*Bull. Off. int. Epiz.* 38, May. pp. 340-359. [English summary.] 856

Attempts to isolate pure cultures of *Trichomonas foetus* when penicillin was added to the media invariably failed owing to death of the trichomonads. This was thought to be due to the penicillin, but in 1946 it was found that certain strains of *Penicillium* produce another antibiotic as well as penicillin. A suitable method of separation is described. The new antibiotic has a trypanocidal action as well as being active against trichomonas infection in cattle.

—J. A. NICHOLSON.

AASER. (1952). Piroplasmose chez les bovidés en Norvège. **[Babesia infection in cattle in Norway.]**—*Bull. Off. int. Epiz.* 38, May. pp. 604-605. 857

Babesiasis in Norway is transmitted by *Ixodes ricinus*. A short account.—J.D.

SUDACHENKOV, V. V. (1952). **[The role of carriers in *Babesia* infection of cattle.]**—*Veterinariya, Moscow.* 29, No. 3. pp. 19-21. [In Russian.] 858

S. examined blood from 83 herds of cattle and concluded that up to 42% of cattle become re-infected without clinical symptoms, these animals with inapparent infection being the main source of infection for ticks which in turn infect and re-infect cattle.

He considered that the best means of eradicating the disease is by the development of a chemotherapeutic agent which would sterilize the blood of cattle from *Babesia* organisms, and that the present method of immunizing by vaccines only, which still leaves the organisms in the blood of carriers, allows the ticks to become infected and to continue the cycle of infection.

—F.A.A.

ABRAMOV, I. V. (1952). **[Summary of the 36th plenary session of the U.S.S.R. Lenin Agricultural Academy, Veterinary section, on protozoan diseases.]**—*Veterinariya, Moscow.* 29, No. 5. pp. 55-57. [In Russian.] 859

This session was held in Moscow, February 27th–March 1st 1951, attended by all the chief veterinarians, 38 papers being read out. In these it was claimed that the following vectors were established:— *Hyalomma scupense* of *Babesia equi* and *Theileria* spp.; *Haemaphysalis bispinosum* of *Theileria sergenti* [*dispar*]; *Rhipicephalus turanicus* of anaplasma infection in

sheep and possibly of *B. ovis*; *Dermacentor marginatus* of *B. equi*.

Infection by *B. equi* aggravates equine infectious anaemia and in diagnosis account must be taken of possible concurrent infections. In the U.S.S.R. strains of *B. equi* vary in their virulence; the percentage of infected ticks also varies in different parts of the country, *e.g.* in the Kislovodsk region it is *nil*. *Babesia* re-infection within one year was demonstrated with both horses and cattle. One speaker thought that *B. equi* developed ex-erythrocytic forms.

In the tick *D. marginatus* passage of *B. caballi* through the egg occurs, but this does not occur with *B. equi*; the reservoir for the latter therefore appears to be the horse. *Theileria* infection in the reindeer was studied. Cross-bred Merino sheep in the mountains of Azerbeidzhan are immune to protozoan diseases. Methods of active immunization against *Babesia* and *Theileria* infections were recommended; also some chemotherapeutic preparations, which are listed. A list of seven items recounted deficiences found in research and in practical veterinary work.

—F.A.A.

ADLER, S. (1952). Les piroplasmoses chez les bovidés en Israël. [*Babesia, Theileria* **and** *Anaplasma* **infections in cattle in Israel.**]—*Bull. Off. int. Epiz.* **38,** May. pp. 570-574. [English summary.] **860**

Piroplasms in Israel belong to 4 prevailing species: *Th. annulata, B. bigemina, B. berbera* and *A. marginale*.

Vaccination of calves with a mild Algerian strain followed by inoculation of a local virulent strain has reduced the incidence of theileriasis. 6000–8000 calves are vaccinated each year.

Premunition against *A. marginale* has recently been introduced.—J.D.

EDDIN BEY, S. (1952). Les piroplasmoses en Egypte. **[Babesia, Theileria, Anaplasma and Aegyptianella infections in Egypt.]**—*Bull. Off. int. Epiz.* **38,** May. pp. 593-603. [English summary.] **861**

Piroplasms in Egypt belong to 3 genera: *Babesia, Theileria* and *Anaplasma*. Infected species include cattle, horses, sheep, pigs and dogs. Heavy losses occur particularly in cattle.

—J.D.

SCHNEIDER, P. (1951). Die Kokzidienruhr des Rindes. Eine Literaturübersicht—dazu eigene Beobachtungen und Erfahrungen in deren Bekämpfung auf der Alp Schnebelhorn. **[Coccidiosis in cattle.]**—*Inaug. Diss., Zürich.* pp. 44. **862**

After a lengthy review of the literature S. reported his own observations on coccidiosis in the Swiss Alps, where more than 30% of cattle are infected.—M. L. CLARKE.

PELLÉRDY, L. & TEMESI, Z. (1951). **The effect of ultraseptyle on experimental liver coccidiosis of rabbits. Attempts to produce active immunity.**—*Acta vet. hung.* **1,** 45-53. [In English. Russian summary.] **863**

A Hungarian sulphonamide, "ultraseptyle", proved effective when given to young susceptible rabbits for a 5-day period from the 3rd–12th day after artificial infection with *Eimeria stiedae*. An active immunity to a heavy re-infection appeared to develop in the treated animals.—M. L. CLARKE.

DAVIES, A. W. (1952). **Lowered liver vitamin A reserves in avian coccidiosis.** [Correspondence.]—*Nature, Lond.* **170,** 849. **864**

In chickens, 8–24 weeks old, with spontaneous intestinal coccidiosis, the liver vitamin A reserves were much lower than in normal chickens. D. suggested that the invasion of the intestinal wall by the parasite interfered with the conversion of carotene to vitamin A.

—JAS. G. O'SULLIVAN.

LELONG, M. & DESMONTS, G. (1952). Sur la nature du phénomène de Sabin et Feldman. **[The Sabin-Feldman test for toxoplasmosis.]**—*C. R. Soc. Biol., Paris.* **146,** 207-209. **865**

The authors found that cytoplasmic changes which form the basis of the Sabin-Feldman test for toxoplasmosis can be followed without the aid of a dye by means of a phase-contrast microscope. Using this technique, they found that the changes induced in the cytoplasm of the parasite by hypotonic solutions were similar to those produced by immune sera. They therefore suggested that the antibodies present in these sera behave similarly to lysins.

One strain of *Toxoplasma* gave positive reactions with all sera and could not be used to reproduce Sabin & Feldman's results. Another strain was originally resistant to the action of normal sera and gave satisfactory results in the test. With repeated passage in mice, this strain began to give positive results with normal sera and its virulence in g. pigs was progressively lost.

The authors discussed the similarities between the Sabin-Feldman test and other lytic systems.—L. P. JOYNER.

CUBONI, E. (1951). Il toxoplasma gondii. [*Toxoplasma gondii* **in animals and man.**]—*Boll. Ist. sieroter. Milano.* **30,** 198-223. **866**

The principal features of toxoplasmosis in man and animals—pathogenic action, immunity,

cultural characters, lab. diagnosis, P.M. findings and treatment—were described in detail. [No new work.]—I. MARTINI.

COWEN, D. & WOLF, A. (1950). **Experimental congenital toxoplasmosis. IV. Genital and secondary lesions in the mouse infected with *Toxoplasma* by the vaginal route.**—*J. Neuropath. exp. Neurology.* **10,** 1-15. **867**

Small primary foci of inflammation developed in the vaginal wall 3–5 days after exposure to *Toxoplasma,* the inflammation showing no tendency to ascend, though dissemination by blood took place to the nervous system, lungs and heart after 9–11 days. The extragenital lesions were similar to those seen in mice infected by other peripheral routes. Parasites were not present in the vagina after 19 days of the disease.—JAS. G. O'SULLIVAN.

EYLES, D. E. & COLEMAN, N. (1952). **Tests of 2,4-diaminopyrimidines on toxoplasmosis.**—*Publ. Hlth Rep., Wash.* **67,** 249-252. **868**

2, 4-Diamino-5-(4-chlorophenyl)-6-ethyl pyrimidine was active against *Toxoplasma* in mice though its efficiency was too low for it to be recommended in human toxoplasmosis.

—JAS. G. O'SULLIVAN.

See also absts. **988** (control of piroplasmosis and trypanosomiasis); **1086** (report, Lister Institute); **1093** (report, Pakistan); **1095** (report, Swaziland); **1099** (report, Zanzibar Protectorate).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

RUKAVINA, J. & KATALINĆ, H. (1951). Neka iskustva kod suzbijanja slinavke i šapa u Bitoljskoj oblasti 1949-1950 god. **[Foot and mouth disease epidemic in Yugoslavia in 1949-1950.]**—*Vet. Glasnik.* **5,** 729-775. **869**

A description of the epizootic of F. & M. disease observed in Bitolj province (Southern Yugoslavia) during 1949–50. It appears to have been caused by a type "O" virus. The outbreaks were controlled by vaccination, by quarantine of infected premises, and by severe restrictions of the movements of animals and human beings in the whole region.—I. MARTINI.

RAMON, G. (1952). Rapport préliminaire sur l'épizootie européenne de fièvre aphteuse durant la période 1951-1952. **[Report on the outbreak of foot and mouth disease in Europe during 1951-52.]**—*Bull. Off. int. Epiz. I.* **37,** 326-346. **870**

A brief review of the replies sent by Member Countries to a questionnaire on the 1951–52 epidemic of F. & M. disease, concerning origin, course of outbreaks, nature of virus, control, results and cost. R. concluded that the only practical method of control is that already laid down by the Office International des Epizooties.

—G. V. LAUGIER.

CHILDS. (1952). **Canada. [Foot and mouth disease in Canada 1951-52.]**—*Bull. Off. int. Epiz. I.* **37,** 414-417. **871**

C. described the Canadian outbreak of F. & M. disease. Its benign character in the early stages resulted in mistaken diagnosis. Slow spread and increased virulence followed. Disposal of carcasses and disinfection were rendered extremely difficult owing to freezing temperatures.—G. V. LAUGIER.

HOLM, P. (1950). Et tilfaelde af mund- og klovesyge hos mennesket. **[A case of foot and mouth disease in man.]**—*Maanedsskr. Dyrlaeg.* **61,** 236-241. [English summary.] **872**

F. & M. disease virus of the O-type was isolated and typed in g. pigs from the blood and saliva of a patient who had atypical symptoms of F. & M. disease when compared with cases previously reported. Stomatitis and conjunctivitis predominated. Attention should therefore be paid to diseases of the mouth and throat of unknown origin.—P. SCHAMBYE.

SROKA, K. (1952). Entzündungen der Mundhöhle bei der menschlichen Zoonose Maul- und Klauenseuche. **[Foot and mouth disease in man.]**—*Tierärztl. Umsch.* **7,** 44-46. **873**

Attention was drawn to the role of stomatitis, especially in children, in the epidemiology of F. & M. disease. S. described the various forms of stomatitis, and discussed differential diagnosis and treatment.

[This article gives the point of view of an experienced general medical practitioner in a country practice.]—A. MAYR-HARTING.

ANON. (1952). **Foot-and-mouth disease research. Interim report, Agricultural Research Council.** pp. 12. London: H.M. Stat. Off. 6d. **874**

This interim report comprises a brief review of work carried out at Pirbright and includes identification of virus types and variant strains, virus and antibody study, vaccine research, immunological work and studies of virus survival in meat and offal. It does not attempt to cover the whole work nor describe any part of it in detail.—G. V. LAUGIER.

DE BRIGARD, J. H. (1952). Virus aftosos Colombianos. **[Foot and mouth disease virus**

strains in Colombia.]—*Rev. Fac. Med. vet., Bogotà.* 20, No. 104. pp. 5-39. 875

A general review of the present state of F. & M. disease in Colombia. The author has listed the types and strains of the disease to be found in Colombia.—A.S.

Skorin, I. E. (1952). **[Bacterial forms of the foot and mouth disease virus.]**—*Veterinariya, Moscow.* 29, No. 7. pp. 20-24. [In Russian.] 876

In 27 experiments bacterial forms of the F. & M. disease virus were obtained by culture on various media, and their morphology, biochemical qualities and variability examined. In the formation of bacterial forms crystallization appeared to be a necessary step from which Gram-positive (sometimes negative) rods and later spherical bodies and larger crystals developed. None were stable or constant, and the chain of mutations was sometimes reversed. Division of cells was observed. Nine photographs showed a sequence of development.

—F.A.A.

Frenkel, H. S. (1950). **Research on foot-and-mouth disease. II. The cultivation of the virus in explantations of tongue epithelium of bovine animals.**—*Amer. J. vet. Res.* 11, 371-373. [Author's summary slightly modified.] 877

F. described a method for the cultivation of the virus of F. & M. disease in surviving explanted epithelial tissue taken from the tongues of adult susceptible cattle. The titre of the virus usually ranges from 10^{-5} to 10^{-6}. The average quantity of virus suspension obtained from the 4 to 8 g. of tissue harvested from each adult bovine tongue is 250 ml.

Palma, E. E. (1950). Importancia del cultivo del virus aftoso utilizando la piel de fetos de bovino para la elaboracion de vacunas antiaftosas. **[Use of epithelium from bovine foetuses for cultivating foot and mouth disease virus for the preparation of vaccines.]**—*Rev. Med. vet., B. Aires.* 32, 77-81. [English and French conclusions.] 878

F. & M. disease viruses have been grown successfully in tissue culture using the skin of 3-month bovine foetuses in a medium containing also bovine lingual epithelium, and muscular and nervous tissue. The virus so obtained was fully virulent and present in high titre.

—J. T. Done.

Röhrer, H. (1951). Die Züchtung des Maul- und Klauenseuche-Rindervirus vom Typ B[A] im Mäusegehirn. **[Passage of foot and mouth disease virus in the brain of the mouse.]**—*Exp. Vet.-Med.* 4, 1-8. 879

The virus of F. & M. disease, adapted to the g. pig and from the g. pig to mouse brain, can immunize g. pigs, but not cattle. R. therefore attempted to adapt a strain from cattle direct to mouse brain. After 135 alternate passages between bovine tongue and mouse brain it was possible to continue the virus in the mouse alone. So far, after 52 passages from mouse brain to mouse brain, the virus had not become neurotropic.—A. Mayr-Harting.

Pyl, G. (1952). Versuche zur Reinigung des neurotrop modifizierten Meerschweinchen-B-Stammes des Maul- und Klauenseuche-Virus. **[Purification of modified neurotropic g. pig A strain foot and mouth disease virus.]**—*Exp. Vet.-Med.* 4, 9-20. 880

The concentration in brain material of the neurotropic strain of F. & M. disease virus is a hundred to a thousand times smaller than that of the original dermotropic strain. To prepare a virus suspension suitable for examination of its physical properties, it has to be concentrated and purified. Mouse brains, freed from all lipoids and dried, were further treated by various combinations of the following methods: (1) trypsin digestion of non-specific protein, (2) adsorption on aluminium hydroxide and elution, (3) precipitation with 50% ammonium sulphate, (4) sedimentation in the ultracentrifuge. Very clear details of all the methods and of the results obtained were given.—A. Mayr-Harting.

Bradish, C. J., Brooksby, J. B., Dillon, J. F. & Norambuena, M. (1952). **Ultracentrifugal studies of the infective and complement-fixing components in the virus system of foot and mouth disease.**—*Proc. roy. Soc.* Ser. B. 140, 107-127. 881

A detailed description of ultracentrifugal studies on the constitution of the virus system of F. & M. disease. It is concluded that these experiments provide a quantitative procedure for the estimation of relative component activities and sedimentation constants in other virus systems.—G. V. Laugier.

Fogedby, E. (1952). Vaccination anti-aphteuse avec un virus formolé additionné d'hydroxyde d'aluminium. **[Immunization against foot and mouth disease with a formolized aluminium hydroxide adsorbed vaccine.]**—*Bull. Off. int. Epiz. I.* 37, 464-472. 882

In a series of assays designed to compare the immunizing powers of Schmidt-Waldmann type vaccines and formolized aluminium hy-

droxide adsorbed vaccine, no difference in immunizing power was established.

—G. V. Laugier.

Brakhage, G. K. & Sampson, F. W. (1952). **Rabies in beaver.**—*J. Wildlife Mgmt.* **16,** 226. 883

Rabies was established by histological examination in a male beaver destroyed while showing symptoms of the furious type at Columbia, Missouri.—F. B. Leech.

Hagan, W. A. & Evans, W. M. (1952). **The diagnosis of rabies.**—*Rep. XIVth. Int. vet. Congr.* **2,** 457-464. [French and German summaries.] 884

The microscopic and biological tests for the diagnosis of rabies were described, the routine used in the authors' laboratory being briefly noted. Discrepancies between microscopic examination and the results of animal inoculation had been studied by Sulkin & Willett (1939). From their results it appears that the chance of 4 positively inoculated white mice all failing to develop rabies is very small. G. pigs and rabbits are more resistant and the incubation period is much longer and more variable.

The authors described an epizootic in foxes and discussed the results of the various diagnostic tests. Negri bodies were relatively less frequent in the infected domesticated species than in the foxes. It was suggested that many dogs may have retained partial immunization from prophylactic vaccination and that this may have affected the development of Negri bodies.

—F. B. Leech.

Nani, S. (1951). Indagini sui fenomeni di emoagglutinazione e di adsorbimento nel virus fisso della rabbia. **[The haemagglutination phenomenon with special reference to the rabies virus.]**—*Arch. vet. ital.* **2,** 417-426. [English, French, German and Spanish summaries. Abst. from English summary.] 885

N. briefly reviewed published work on haemagglutinating capacity of viruses, rickettsia, and schizomycetes and discussed the results he had obtained in a study on haemagglutination and adsorption *in vitro* of a strain of rabies fixed virus. He concluded that the virus has no haemagglutinating activity on the r.b.c. of g. pigs, rabbits, fowls, sheep, cattle, horses, pigs and man. It is however adsorbed *in vitro* by the r.b.c. of horses, pigs, rabbits, cattle and g. pigs. He discussed whether this is due to a simple physico-chemical process or to the fixation of the virus on particular red cell receptors and considered that further work was necessary.

Lapi, A., Davis, C. L. & Anderson, W. A. (1952). **The gasserian ganglion in animals dead of rabies.**—*J. Amer. vet. med. Ass.* **120,** 379-384. 886

Of 40 cases diagnosed "positive" from impression smears of the hippocampus, 31 had characteristic changes in the gasserian ganglion. Of the other nine, eight may originally have been wrongly diagnosed as positive.—F. B. Leech.

Haupt, H. (1952). Zur Frage der Vorbeugung gegen die Wutkranheit. **[The control of rabies.]**—*Mh. prakt. Tierheilk.* **4,** 26-34. 887

A plea for compulsory immunization of dogs in Germany against rabies. H. reviewed the history of rabies vaccination and gave a useful list of references.—E.G.

Piringer, W. A. & Hell, H. M. (1950). Die Tollwutschutzimpfung nach Hempt. **[Immunization against rabies.]**—*Z. Hyg. InfektKr.* **130,** 543-564. 888

An analysis of 955 persons, immunized against rabies during 1943–47 by the method described by Hempt. This method has proved completely satisfactory.—W. R. Bett.

Donatien, A. (1948). Sur des varioles animales étudiées à l'Institut Pasteur d'Algérie. **[Pox diseases of animals studied at the Institut Pasteur, Algiers.]**—*Rev. Méd. vét., Lyon et Toulouse.* **99,** 204-210. 889

An account of work on sheep pox and cow pox and of methods of immunization with details of preparation of vaccines.

—H. de Bartos-Rivalier.

Herrlich, A. & Bednara, M. (1952). Weitere Prüfungen über Sterilität und Haltbarkeit der Streptomycinlymphen. **[Keeping quality of lymph sterilized with streptomycin.]** — *Z. Hyg. InfektKr.* **134,** 123-128. 890

Streptomycin satisfactorily destroyed the contaminating flora of vaccinia lymph without affecting its potency. The bactericidal action of streptomycin was not influenced by temperature and was greatest when the glycerin content was lowest.—E.G.

Salk, J. E. & Laurent, A. M. (1952). **The use of adjuvants in studies on influenza immunization. I. Measurements in monkeys of the dimensions of antigenicity of virus-mineral oil emulsions.**—*J. exp. Med.* **95,** 429-447. 891

When inoculated into monkeys, influenza virus in water-in-mineral-oil emulsion produced antibody levels many times higher than virus in an aqueous vehicle alone. The level of antibody induced was related to the quantity of antigen in the emulsion. Haemagglutination-inhibiting,

virus-neutralizing and complement-fixing antibodies developed at different rates, were independent of one another and were not present in constant proportion.—Clive Briggs.

Meiklejohn, G., Weiss, D. L., Shragg, R. I. & Lennette, E. H. (1952). **Evaluation of monovalent influenza virus vaccines. I. Observations on antibody response following vaccination.**—*Amer. J. Hyg.* 55, 1-11. 892

Meiklejohn, G., Kempe, C. H., Thalman, W. G. & Lennette, E. H. (1952). **Evaluation of monovalent influenza vaccines. II. Observations during an influenza A-prime epidemic.**—*Ibid.* 12-21. 893

I. The increase in the serum titres of human beings given influenza vaccines was measured by agglutination inhibition, c.f. and mouse neutralization tests, discrepancies in the results being discussed. The authors described the use of a vaccine prepared from an A-prime strain of influenza virus.

II. In a human epidemic caused by an A-prime strain of influenza virus the previous use of an A-prime vaccine reduced the cases hospitalized from 4·0 and 4·2% in control groups to 1·2% in those vaccinated, mainly 2–3 months previously. These results are comparable to previous satisfactory results in epidemics caused by A virus when A strain vaccines have been used. In this epidemic an A strain vaccine failed to give protection. Low antibody titres (agglutination-inhibition test) after the vaccination with an A-prime strain were apparently related to increased susceptibility.—K. G. Towers.

Hoshi, S. & Ito, T. (1951). **[Statistics of equine encephalitis in Japan.]**—*2nd. Rep. Jap. Equine Encephalitis.* 1-42. [English summary]. 894

The epizootics of 1947, 1948 and 1949 were summarized, and statistical analysis was applied to the mortality of the disease in 1948 and the results of vaccination carried out in 1948 and 1949.—Kogi Saito.

Shimizu, T., Mochizuki, H., Sugawa, Y., Okazaki, K. & Matumoto, M. (1951). **[Studies on Japanese encephalitis of cattle. I. Bovine encephalitis caused by natural infection with Japanese encephalitis virus.]**—*2nd. Rep. Jap. Equine Encephalitis.* 111-118. [In Japanese. English summary.] 895

Shimizu, T., Sugawa, Y., Mochizuki, H., Harada, K., Okazaki, K. & Matumoto, M. (1951). **[Studies on Japanese encephalitis of cattle. II. Experimental infection of calves with virus of Japanese encephalitis.]**—*Ibid.* 119-128. [In Japanese. English summary.] 896

I. A neurotropic virus identified as that of Japanese encephalitis was isolated from the brain tissue, but not from the 7-month foetus of a cow that died of encephalitis in the Kanagawa prefecture, Japan.

II. Although spontaneous bovine encephalitis is very rare, cattle can be readily infected, developing encephalitic symptoms, by introducing the virus into the c.n.s or intranasally. This suggests that the low incidence of spontaneous infection in cattle is due not to the low susceptibility of the c.n.s, but to an effective blood-brain barrier.—Kogi Saito.

Ishii, S. & Ishihra, T. (1951). **[Hematological change of artificially inoculated cattle with Japanese B encephalitis virus.]**—*2nd. Rep. Jap. Equine Encephalitis.* 129-138. [In Japanese. English summary.] 897

In 6 cattle, divided into 3 groups, inoculated with the virus intracerebrally, i/v and intranasally, anaemia, seen at the 3rd day after injection, continued for several days. The number of leucocytes decreased, the neutrophile leucocytes increased at first but soon decreased and the monocytes generally increased at the convalescent stage. No change was found in the number of eosinophiles, basophiles and plasma cells. No erythroblasts were seen. Reticulocytes and polychromatic red cells did not increase.

—Kogi Saito.

Shimizu, T., Kawakami, Y. & Matumoto, M. (1951). **[Fate of the virus of Japanese encephalitis inoculated intradermally into swine.]**—*2nd. Rep. Jap. Equine Encephalitis.* 85-92. [In Japanese. English summary.] 898

The virus was clearly demonstrable in the blood stream and in local skin tissues for a relatively long period in pigs inoculated intradermally with large amounts of virus. Clear-cut results were not obtained in pigs given small amounts of virus.—Kogi Saito.

Tsubahara, H., Harada, K., Matsumoto, M. & Kitaoka, M. (1951). **[Effectiveness of vaccination of horses with formalin mouse brain vaccine to intracerebral infection with the virus of Japanese encephalitis.]**—*2nd. Rep. Jap. Equine Encephalitis.* 75-84. [In Japanese. English summary.] 899

Of five horses, inoculated respectively with 3 different doses (10, 20 and 30 ml.) of Japanese encephalitis mouse brain vaccine and given an intracerebral challenge dose of 5 ml. of 10^{-5} dil.

of infected mouse brain, 2 survived and 3 died in 13, 21 and 29 days. 5 control animals died within 7–13 days.—Kogi Saito.

Mochizuki, H. & Sugawa, Y. (1951). **[Histopathological studies on mice inoculated with Japanese B encephalitis virus originated from animals.]**—*2nd. Rep. Jap. Equine Encephalitis*. 103-110. [In Japanese. English summary.] **900**

Histopathological changes appeared in the order of leptomeningitis, perivascular cuffing, glial proliferation and finally severe damage to the nerve cells. The clinical symptoms were typical of severe damage to the nerve cells.

—Kogi Saito.

Tabuchi, E., Hosoda, T., Akiyama, Y. & Narita, R. (1951). **[Studies on Japanese B encephalitis in goat.]**—*2nd. Rep. Jap. Equine Encephalitis*. 165-176. [In Japanese. English summary.] **901**

A strain of virus isolated from one of 5 goats with nervous symptoms was identified as Japanese B encephalitis. Naturally infected goats had descending paralysis (from head to hindquarters) without symptoms of excitement. The lesions tended to appear in the pedunculi, the pons and the medulla oblongata.

—Kogi Saito.

Sabin, A. B. (1951). **Quantitative studies on prophylactic effectiveness of western equine encephalitis antiserum in mice.**—*Proc. Soc. exp. Biol., N.Y.* **78,** 655-658. **902**

The amount of antiserum required for protection varies according to the amount of virus and the size of the animal. The size of the natural infective dose is, however, unknown.

—K. G. Towers.

Parnas, J. (1952). Zasady diagnostyki anemii zakaźnej. **[Diagnosis of equine infectious anaemia.]**—*Méd. vét., Varsovie.* **8,** 21-24. [In Polish. English and Russian summaries.] **903**

Apart from giving clinical signs, P. recognizes five forms of E.I.A.:— (1) septic—with typical fever; (2) anaemic or haemolytic—the most typical, with anaemia and jaundice; (3) cardiotropic—affecting the heart and blood vessels; (4) neurotropic—affecting the c.n.s.; (5) mixed. Careful histological examination is most important in this rather complicated diagnostic method.—J. R. Mitchell.

Marchetti, E. (1949). Comunicacion sobre la existencia de un virus en la enfermedad de la nufria (*Myocastor coypus*) y su relacion con la encefalomielitis de los equinos. **[A virus disease of the nutria and its relation to equine encephalomyelitis.]** — *Rev. Med. vet., B. Aires.* **31,** 93-100. **904**

From an outbreak of a disease which in the previous 5 years had been responsible for heavy losses on nutria farms, a virus was recovered which cross-immunized against a strain of equine encephalomyelitis [type not specified]. The virus was easily passaged in g. pigs and embryonated eggs, and accidentally in a laboratory worker.—J. T. Done.

Stein, C. D., Gates, D. W. & Rogers, H. (1952). **Attempts to propagate the virus of equine infectious anemia in embryonated eggs with special reference to cultivation in the yolk sac.**—*Vet. Med.* **47,** 229-232 & 234. **905**

Attempts to propagate the virus in the yolk sac of embryonated eggs failed, the inoculation having no effect on the embryos, and susceptible horses inoculated with suspensions of the embryos failed to develop symptoms and remained fully susceptible when subsequently exposed to virus.—D. Luke.

Leonhardt, H. (1951). Beitrag zu den Begleitumständen der Bornaschen Krankheit. **[Borna disease.]** — *Mh. Vet.-med.* **6,** 257-259. **906**

L. stated that the virus of Borna disease is easily destroyed by chlorine and that the decrease of albumin in plasma and cerebrospinal fluid (c.s.f.) increases the chlorine content of the latter. In this connexion he discussed some substances which influence the albumin content of plasma and c.s.f., such as adrenocortical, thyroid and follicular hormones and vitamins B_1 and B_2. He also recommended sulphanilamide treatment.—E.G.

Receveur. (1952). Réflexions sur l'épidémiologie de peste bovine en Afrique Centrale. **[The epidemiology of rinderpest in Central Africa.]**—*Bull. Off. int. Epiz.* **37,** 536-541. **907**

Comment is made on a finding reported in the annual report of the Kenya veterinary department for 1949 that cattle which had been immunized with a lapinized virus reacted thermally when challenged with virulent bovine virus. Virus taken from the cattle at the time of reaction and passaged serially four times became progressively more virulent. R. considers that this finding is of considerable epidemiological importance as he maintains that it indicates that a virulent virus can quite suddenly lose virulence, without losing invasiveness, when intro-

duced into partially immune cattle. He discusses the implications of this on eradication campaigns.—M.C.

EDDIN BEY, S. (1952). **[Rinderpest in Egypt.]**—*Bull. Off. int. Epiz.* **37**, 319-320. **908**

After an outbreak of 17 cases of rinderpest in Lower Egypt, animals were vaccinated with lapinized, avianized and goat virus vaccines with good results.—J.D.

BERGEON, P. (1952). Peste bovine: richesse en virus pestique des tissus nerveux et de la moelle osseuse de veaux atteints de peste bovine expérimentale. **[Rinderpest: virus content of nervous tissues and bone marrow.]**—*Bull. Soc. Path. éxot.* **45**, 148-152. **909**

The bone-marrow was found to contain greater quantities of the virus than brain or spinal cord; it is therefore more suitable for vaccine production.—A. MAYR-HARTING.

BIANCHI, C. (1950). L'influenza dei bovini dal punto di vista clinico ed eziologico. **[Clinical and epidemiological features of bovine influenza.]**—*Profilassi.* **23**, 163-169. **910**

Bovine influenza may affect either the respiratory or the digestive tract, or both. The course of the disease, if there are no complications due to the invasion of secondary organisms, is generally benign. Hygienic, climatic and nutritional conditions play an important role in its development and clinical manifestations.

B. suggests a symptomatic treatment (stimulants, and suitable diet) together with the administration of febrifuges and antibiotics in more serious cases (broncho-pneumonic complications). [The causal organism of this condition is not stated.]—M. BERTANI.

ROTTGARDT, A. A. & GARCÍA PIRAZZI, A. J. (1951). Ectima contagioso. Inoculación experimental del virus que lo provoca y su comportamiento. Un síntoma muy particular en ovinos. **[Contagious pustular dermatitis of sheep.]**—*Rev. Med. vet., B. Aires.* **33**, 251-260. **911**

Sheep responded in an unusual way to inoculation with the virus of contagious pustular dermatitis. Inoculation in the region of the thorax or abdomen produced, in addition to normal lesions, an extensive oedema very suitable as a source of material for vaccine. Scabs from infected animals, desiccated over sulphuric acid, retained their infective power for more than 14 years.—A.S.

LOPEZ Y LOPEZ. (1952). Agalaxie contagieuse. Culture du virus et vaccination préventive et curative. **[Contagious agalactia. Cultivation of the causal organism and preparation of a vaccine.]**—*Bull. Acad. vet. Fr.* **25**, 23-25. **912**

Isolation of virus and culture and preparation of vaccines were described. From this work it was concluded that the virus of contagious agalactia was isolated and cultured on chick embryos. An effective vaccine was prepared, but specific regional autogenous vaccines are thought to be preferable.—G. V. LAUGIER.

MCEWEN, A. D., LITTLEJOHN, A. I. & FOGGIE, A. (1951). **Enzootic abortion in ewes: some aspects of infection and resistance.**—*Vet. Rec.* **63**, 489-492. **913**

Suspensions of spleen and lymph nodes from lambs killed 2–3 months after inoculation with the virus of ovine enzootic abortion (infected egg yolk sac) produced in 10 cases abortion or lambing with infected foetal membranes within 8–10 weeks of inoculation into 99 pregnant sheep. From the time elapsing between infection and abortion or lambing it appeared that pregnant ewes infected from their fellows 5–6 weeks before lambing would lamb normally. 100 ewe lambs born in 5 infected flocks were moved to clean pastures and were served when 8 months old; out of 83 subsequent pregnancies, six terminated in abortion and 22 in lambing with infected membranes.

In ewes artificially infected with a small dose of virus 3 months before service, double inoculation with formolized vaccine at a 14-day interval 2 months later significantly reduced the incidence of infected foetal membranes at lambing. The infectivity of a small dose (1 ml. of a 1:100,000 suspension of infected egg yolk sac) of virus was equal to or greater than that of a dose 100 times larger; the latter may stimulate immunity more effectively or more consistently than the smaller dose.—CLIVE BRIGGS.

MCFARLANE, D., SALISBURY, R. M., OSBORNE, H. G. & JEBSON, J. L. (1952). **Investigation into sheep abortion in New Zealand during the 1950 lambing season.**—*Aust. vet. J.* **28**, 221-226. **914**

The results of an investigation into the causes of abortion in ewes during the lambing season of 1950 were recorded. One outbreak was found to be due to infection with *Vibrio fetus*. About 30 abortions occurred in a mob of 880 ewes. Direct smears of foetal abomasal contents revealed large numbers of organisms with the characteristic morphology of *V. fetus*. The organism was isolated, transmitted to pregnant ewes and recovered from the lambs of some of them. The liver of one of the foetuses submitted from the outbreak showed scattered

necrotic foci which histologically were areas of acute infective coagulative necrosis. The livers of twin lambs born from one of the experimentally infected ewes showed similar lesions. No macroscopic lesions were observed in the placenta.

Another outbreak of abortion was found to be associated with a rickettsia-like organism which resembled but was apparently not identical with that described by STAMP *et al.* [*V.B.* **21,** 813]. During the 1950 lambing season about 10% of the ewes aborted. A detailed description was given of the diseased membranes which had easily recognizable lesions comprising necrosis of the cotyledons and small plaque-like thickenings between them. The histological features of the diseased membranes were also described. The organism was subsequently grown in the yolk sac of chick embryos.

—D. F. STEWART.

HELMBOLDT, C. F. & JUNGHERR, E. L. (1952). **Further observations on the neuropathological diagnosis of hog cholera.**—*Amer. J. vet. Res.* **13,** 309-317. **915**

In this extension of their earlier work [*V.B.* **20,** 1266] the authors examined the brains from a further 155 pigs, comprising 35 cases of swine fever, 52 cases of non-infectious disease, 12 cases of infectious disease (including 4 involving encephalitis), 20 pigs vaccinated against swine fever by various methods, and 36 healthy controls (mostly from Canada which is free from swine fever).

Analysis of the whole series of 279 brains shows that there were lesions of non-suppurative encephalitis in 81 of 85 cases of swine fever. Of the 194 non-swine-fever cases only 12 showed cellular infiltration of the brain; in 8 they consisted of small non-specific foci without endothelial involvement, while the remaining 4 comprised listeriasis (1), purulent meningitis (1), and a lymphocytic choriomeningitis (2), all differentiable histologically from the type of encephalitis seen in swine fever.—J. T. DONE.

SHABUROV, M. S. (1952). **[Bacterial form of the organism of swine fever.]**—*Veterinariya, Moscow.* **29,** No. 7. pp. 12-19. [In Russian.] **916**

By culturing both virus and immune sera S. claimed to have substantiated the evidence of others that the viral form of the swine fever organism changes into non-filtrable forms namely Gram-positive rods and spherical bodies. Virulence was retained, apparently by adsorbtion of some virus particles, but waned in successive cultures. All these mutating forms reverted and became fully pathogenic when injected into pigs. Details of tests on 46 pigs were set out in six tables.—F.A.A.

QUESADA, A. (1950). Contributo allo studio della vaccinazione contro la peste suina. **[Swine fever vaccination.]**—*Atti Soc. ital. Sci. vet.* **4,** 780-786. [English and French summaries.] **917**

Repeated injections of small doses of crystal-violet vaccine do not shorten the negative phase. The inoculation of a mixture of immune serum plus virus (9:1) seems to be the best procedure in Sardinia in infected premises.

—I. MARTINI.

ANON. (1952). **That cholera vaccination conundrum.**—*J. Amer. vet. med. Ass.* **120,** 309-310. **918**

Attempts to produce effective vaccination against swine fever during the last 40 years were briefly reviewed. It was shown that no method to date has proved more effective than the simultaneous swine fever antiserum and virus vaccination. The problem of effective vaccination without post vaccination troubles is still unsolved.—A. H. LINTON.

PLACIDI, L. (1952). Présence au Maroc d'une infection porcine épizootique du type des pneumonies à virus. **[An epizootic virus-type pneumonia of pigs in Morocco.]**—*Ann. Inst. Pasteur.* **83,** 141-142. **919**

The existence of a virus-type pneumonia of pigs has recently been recognized in Morocco. The condition can be transmitted by the inoculation of Chamberland L3 filtrates of affected lungs, but secondary bacterial invaders play a large part in the evolution of the naturally occurring disease. P. claims that the condition is due to a pneumotropic virus, possibly related to those described by PULLAR in Australia [*V.B.* **19,** 2250; **20,** 2780 & 2986; **21,** 2839], and GULRAJANI *et al.* [*V.B.* **22,** 1343 & 2488-89] in Britain.—J. T. DONE.

CHERKASSKI, E. S. (1951). **[Research on dog distemper.]**—*Veterinariya, Moscow.* **28,** No. 9. pp. 28-39. [In Russian.] **920**

C. discussed various aspects of the disease and described his own work. He doubted if associated bacterial flora caused secondary infection. In his opinion this was due to bacterial and crystalline forms of the virus which he claimed to have produced from both filtered and unfiltered blood and from virus passaged through chick embryos. He described the morphology of the distemper virus in various stages of mutation, illustrated by eight photomicrographs and electron micrographs.

Over 100 strains, diluted 10^{-12}, were successfully passaged in chick embryos, the virulence becoming successively attenuated. Using some of the mutating forms of the virus infections were set up in 166 puppies. This multiplicity of forms of the virus might partly explain why different types of distemper virus are found in dogs. The final form of the mutation was granular, resembling rose-coloured yeast particles. It is heat-stable and the inference was that it is in this form that the distemper organism is able to survive outside the host.

The pathological picture of the infected chick embryo was stated to be so characteristic that it could be used as a specific diagnosis for distemper. C. thinks that each species of animal has an immunologically specific type of distemper virus, although genetically all are closely allied; also, that in the U.S.S.R. the strains differ according to their geographical source. Attempts to infect various species of rodents gave patchy results. The role of man as carrier was being investigated.

C. has prepared a non-toxic live polyvalent vaccine and a hyperimmune serum, which are now being officially widely tested. To date the vaccine has given immunity lasting up to six months to about 90% of several thousand dogs, while of the controls 50% became infected. The serum proved successful in 80% of treatments and conferred passive immunity for 10–14 days. Other recommended treatments were blood transfusion from convalescent dogs, which gave 90% cure, and the use of penicillin and sulphonamides.—F.A.A.

Michálek, J. (1950). Profylaktická a léčivá imunisace při febris canum catarrhalis. [**Prophylactic and therapeutic immunization in dog distemper.**—*Čas. československ. Vet.* **5,** 566-568. [In Czech. French summary.] **921**

An immune serum from a horse, injected into dogs simultaneously with a suspension of the spleen from a dog that had died of distemper, was found to prevent the disease in three out of four cases. Vaccines were prepared from formolized suspensions of brain and spleen of a dog with distemper, and mixed with a heated suspension in "yellone" or yellone-casein [composition not given] of organisms regarded as secondary invaders. M. stated that these vaccines had a prophylactic and a therapeutic effect.
—A. Mayr-Harting.

Van Den Akker, S. (1952). Hepatitis contagiosa canis. (Rubarth). [**Canine virus hepatitis.**]—*Tijdschr. Diergeneesk.* **77,** 168-173. [English summary.] **922**

Canine virus hepatitis occurred in a litter of 4 Afghan hounds, 10 weeks old. The disease was set up in dogs by i/p inoculation. This was stated to be the first case diagnosed in the Netherlands.—C. A. van Dorssen.

McKercher, D. G. & Saito, J. K. (1951). **Feline pneumonitis in California.**—*Calif. Vet.* **5,** 15-16. **923**

The presence of feline virus pneumonitis in California has been confirmed by the isolation from six cats of strains of virus serologically identical with that present in eastern America.
—J. T. Done.

Fenner, F., Day, M. F. & Woodroofe, G. M. (1952). **The mechanism of the transmission of myxomatosis in the European rabbit** (*Oryctolagus cuniculus*) **by the mosquito** *Aedes aegypti.*—*Aust. J. exp. Biol. med. Sci.* **30,** 139-152. [Authors' summary slightly modified.] **924**

Female *Aedes aegypti* mosquitoes, which fed on the ear of a domestic rabbit which was infected with myxoma virus 6 days earlier, ingested virus with the blood but failed to transfer the disease, whether tested within a few min. or up to 29 days after the infective feed. Pins stuck into the ear of the same rabbit at the same time also failed to transfer the infection. Female *Aedes aegypti* mosquitoes, which fed on the skin lesion of a domestic rabbit infected with myxoma virus 8 days earlier, ingested virus with the blood and some also contaminated their probosces with virus. Positive transfers were obtained at intervals varying from a few min. (interrupted feeding) up to 25 days after the infective feed. Pins stuck into the same skin lesion transferred the infection at intervals varying from a few min. to 12 days.

The probability of mosquitoes becoming infected when probing through a skin lesion increased with the age of the lesion, and with well developed lesions between 60 and 70% of the mosquitoes became infectious. The probability that a mosquito with a contaminated proboscis would successfully transfer the disease diminished as the interval between the infective feed and a subsequent feed increased. Negative results not infrequently intervened between two positives.

Titration of dissected mosquitoes provided no evidence for either a transfer of virus from the gut to the haemocoele, or for multiplication of the virus in the mosquito. Eggs laid by females whose only blood meal was upon an infected rabbit produced larvae and adults neither

of which were infective upon inoculation into or by feeding on rabbits.

Transmission of myxomatosis by the mosquito *Aedes aegypti* is thus purely mechanical in its nature, and is due to contamination of the mouth parts of the mosquito with virus during its passage through the virus-infected skin of an infected rabbit.

McKercher, D. G. (1952). **Infectious myxomatosis. I. Vaccination. II. Antibiotic therapy.**—*Amer. J. vet. Res.* **13,** 425-429. [Author's summary copied *verbatim.*] **925**

I & II. Attempts to immunize domestic rabbits against infectious myxomatosis by means of heat and chemically inactivated, egg-adapted myxoma virus were unsuccessful. Aureomycin, penicillin, chloromycetin, and terramycin were found to be of no therapeutic value in this disease.

Jordan, J. & Mirick, G. S. (1951). **Hepatitis in mice, of presumed viral origin.**—*Johns Hopk. Hosp. Bull.* **89,** 326-331. [Abst. from authors' summary.] **926**

An agent causing transmissible hepatitis in mice was isolated. The authors discussed its possible relationship to the virus of human hepatitis.

Zangerle, O. (1952). Über Darmveränderungen bei chronischer Hühnerpest. **[Intestinal lesions in chronic Newcastle disease.]** —*Berl. Münch. tierärztl. Wschr.* **65,** 148-149. **927**

Newcastle disease at present prevalent in the Rhineland is a chronic infection and the lesions differ from the typical picture of the acute disease. They consist mainly in proliferation of the reticulo-endothelium of the intestine.

—A. Mayr-Harting.

Yates, V. J., Fry, D. E. & Henderson, B. W., Jr. (1952). **Isolation of Newcastle disease virus from a calf.**—*J. Amer. vet. med. Ass.* **120,** 149-150. **928**

The authors described a naturally-occurring respiratory condition in a calf from which N.D.V. was isolated.—Clive Briggs.

Feibel, F., Helmboldt, C. F., Jungherr, E. L. & Carson, J. R. (1952). **Avian encephalomyelitis—prevalence, pathogenicity of the virus, and breed susceptibility.**—*Amer. J. vet. Res.* **13,** 260-266. **929**

During recent years this disease has spread throughout the U.S.A. and has become of especial economic importance in the broiler areas. The virus was still infective after storage at −20°C. for 428 days. Antibiotics exerted no inhibitory effect on the virus. The virus was demonstrated in the allantoic fluid of embryonating eggs up to 7 days after inoculation. The intra-ocular route was shown to be an effective method of experimental transmission. Adult birds were successfully infected by the i/p route. Neutralising antibodies were found in recovered birds. Significant differences in susceptibility were observed among the strains of birds used.

—D. Luke.

Coles, J. D. W. A. (1951). **Acute psittacotic conjunctivitis in the domestic pigeon. Case report.** — *J. S. Afr. vet. med. Ass.* **22,** 189. **930**

C. recorded a case of bilateral psittacotic conjunctivitis in a pigeon. Young mice inoculated intracerebrally with conjunctival scrapings died of typical psittacotic meningo-encephalitis. Psittacosis should be suspected whenever a pigeon is affected with conjunctivitis.

—E. G. White.

Strode, G. K. [Edited by.] (1951). **Yellow fever.** pp. xv+710. New York: Toronto: London: McGraw-Hill Company, Inc. 1st Edit. 85s. **931**

This work consists of a series of monographs by authors who have an intimate knowledge of the various aspects of yellow fever and the whole forms a most useful reference book not only to those who are primarily interested in yellow fever, but also to all who work with viruses.

The chapter on "Landmarks in the conquest of yellow fever" is particularly well-written. We may have forgotten that transmission by insects was proved before the cause of yellow fever was established and that yellow fever was the first human disease shown to be caused by a filter-passing virus. The part played by the Rockefeller Foundation in furthering investigation into this disease is not likely to be forgotten, but the outline of the steps by which progress was made are here clearly outlined and the many photographs of workers whose names are "laboratory" if not "household" words add interest to this historical account by Andrew J. Warren.

Other monographs by Max Theiler on "The virus", John C. Bugher on "The pathology", Kenneth C. Smithburn on "Immunology", Loring Whitman on the "Arthropod vectors", John C. Bugher on the "Mammalian host" and "Epidemiology" by Richard M. Taylor should be of interest to general virologists. Others on "The clinical aspects and diagnosis", "Controlling yellow fever" and "Costs and man power"

will prove of greater value to our medical confrères and yellow-fever specialists. Would that some of our viral diseases were equally well surveyed!

The bibliography runs to thirty-four pages and is one of the most useful parts of the book.

—J. R. Hudson.

Bingel, K. F. & Heid, W. (1951). Epidemiologische Untersuchungen zu einer epidemischen Virusmeningitis. [**Research on a virus meningitis epidemic.**]—*Z. Hyg. InfektKr.* **132,** 202-212. **932**

The authors described an epidemic of meningitis which occurred near Heidelberg, in 1949, caused by a virus, very similar to, but not completely identical with, that of choriomeningitis. Infection from one person to another was common. Field mice formed a virus reservoir. Transmission occurred, it was thought, from them to the upper respiratory tract of man *via* field dust.—W. R. Bett.

Giroud, P., Le Gac, P., Brizard, H. & Laurent, C. (1952). Comportement des sérums de divers animaux domestiques, de l'Oubangui-Chari, vis-à-vis de l'antigène épidémique. [*Rickettsia prowazeki* **antibodies in the serum of domestic animals.**]—*Bull. Soc. Path. éxot.* **45,** 313-316. **933**

In 128 domestic animals of various species indigenous to Ubangi-Shari, 74 positive reactions with titres from 1:80 to 1:640 were obtained to *R. prowazeki.* It was, however, pointed out that any of the spotted fever group of rickettsial organisms may be responsible for these positive reactions, owing to the presence of group antigen. Consequently there is no actual proof that these animals are reservoirs of typhus fever.—B. C. Clarke.

Baldelli, B. (1951). Ulteriori osservazioni e ricerche sulla febbre Q degli ovini. [**Q fever in sheep.**]—*Atti Soc. ital. Sci. vet.* **5,** 355-363. [English summary.] **934**

In infected sheep the c.f. reaction remains positive for quite a long time. This reaction can also be carried out with milk serum: however, a positive result is seen only in those infected sheep which are actually excreting *Rickettsia burneti* with the milk.—I. Martini.

Kausche, G. A. & Sheris, E. (1951). Zur Morphologie der Rickettsia burneti. [**Morphology of** *R. burneti.*]—*Z. Hyg. InfektKr.* **133,** 148-159. **935**

The American "Nine Mile" and "Henzerling" strains were compared with *R. burneti* isolated from German human patients and cows. On comparison by ordinary, ultra-violet and electron microscopy, the German strains resembled the American strains morphologically. It is stated that *R. burneti,* when cultured in certain non-specific media changes its characteristic form without, however, losing its biological properties. The original form is usually regained after several passages in chick embryos. There are 28 photomicrographs of rickettsial forms.

—E.G.

Smith, K. M. (1952). **Latency in viruses and the production of new virus diseases.**—*Biol. Rev.* **27,** 347-357. [Author's summary copied *verbatim.*] **936**

Latent viruses have been shown to occur in mice, caterpillars and bacteria. These can be stimulated to activity, so that disease results, by various methods such as by serial passage in mice, by feeding with certain simple chemical compounds and possibly by adverse conditions in caterpillars, and by irradiation in bacteria. Latent viruses also occur in plants, but there is little evidence at present that these can be stimulated to cause visible disease in their original hosts. It is necessary to transfer these viruses to another species or variety of plant for them to become virulent. There is a little circumstantial evidence for the endogenous origin of certain of the plant viruses, but there may also be some special factors concerning them, notably their method of spread, of which we are at present ignorant.

Koprowski, H. (1952). **Latent or dormant viral infections.**—*Ann. N. Y. Acad. Sci.* **54,** 963-976. **937**

A review article dealing with methods of detection of latent infections, examples of latent infections in man and animals, latent infections in arthropod vectors and the occurrence of viruses in the course of propagation of tumour tissues in mice and eggs. There are a number of useful tables summarizing information under various headings.—M.C.

Kravchenko, A. T. (1950). [**Developments following Ivanovski's theory on viruses.**]—*Mikrobiologiya, Moscow.* **19,** 516-526. [In Russian.] **938**

The problem of the nature of viruses posed by Ivanovski in 1892 was developed by Boshyan, Shubladze and others. Working independently, their approach was, nevertheless, largely identical. They argued that, because the virulence of viruses can be altered to form vaccines (*vide* Jenner, Pasteur etc.) they are therefore mutable. Viruses were, therefore, "cultured" under various conditions with the

consequence that bacterial, crystal and other forms were observed to grow, multiply and develop.

In another line of research Lepeshinskaya stated that organized cells can be obtained from unorganized living matter, thus opening a new path for the study of the origin of viruses and through this to the study of the origin of life. Reference was made to vaccines against measles, Japanese B and a tick-borne encephalitis having been obtained.—F.A.A.

POLLARD, M. & BUSSELL, R. H. (1952). **Oncolytic effect of viruses in tissue cultures.**—*Proc. Soc. exp. Biol., N. Y.* **80,** 574-578. [Authors' summary modified.] 939

Tumor implants, growing in roller tube cultures, demonstrated a marked oncolytic response to St. Louis encephalitis infection. Two human and 2 rodent tumors were destroyed completely by SLE virus, less completely by neurotropic influenza virus. Infections with Lansing poliomyelitis, Newcastle disease, herpes and chick embryo adapted influenza A viruses did not interfere with growth of tissue implants. Rabies virus appeared to stimulate the growth of such tumor implants. The tissue culture technique can be used as a survey tool in rapidly determining the cytopathogenic effect of viral agents on tumors.

BEAUDETTE, F. R., BIVINS, J. A. & HUDSON, C. B. (1952). **Chicken embryo inoculation procedures for virus cultivation.**—*Amer. J. vet. Res.* **13,** 267-272. 940

The authors mentioned the review on this subject by Beveridge and Burnet [*V.B.* **17,** 2297], and gave a brief review of earlier work. They described a technique in which virus growth in any part of the embryo, and tissue transplants may be obtained, the egg being opened over the natural air cell only. They discussed the advantages of this technique.

—F. T. W. JORDAN.

BEVERIDGE, W. I. B. (1952). **Immunity to viruses. A general discussion with special reference to the rôle of allergy.**—*Lancet.* **263,** 299-304. 941

Virus diseases are divided into three classes, (1) those which produce durable immunity, (2) those which produce immunity of short duration, though virus is eliminated on recovery, (3) those in which virus persists and relapses are common. The significance of antigenic mutation, neutralizing and sensitizing antibodies, and response to artificial immunization were discussed.

The possible function of allergy in resisting invasion of epithelial surfaces is discussed and development of allergenic vaccines suggested.

—IAN DAVIDSON.

See also absts. **1084** (bacteriophage typing); **1093** (report, Pakistan); **1094** (report, Northern Rhodesia); **1095** (report, Swaziland); **1098** (report, Gambia Colony); **1101** (report, U.S.A.); **1103** (annual review of microbiology).

IMMUNITY

KARLSHOJ, K. & SZABO, L. (1951). **On maternal antibodies in duck eggs and ducklings.**—*Off. Rep. 9th World's Poult. Congr., Paris.* **3.** 90-95. 942

The authors attempted to protect ducklings from clinical salmonellosis by vaccinating the parent birds with *Salmonella typhi-murium* dead vaccines. No appreciable protection was demonstrable on exposure to experimental infection.—E. A. GIBSON.

I. RICE, C. E., BOULANGER, P. & PLUMMER, P. J. G. (1952). **Parallel studies of complement and coagulation. V. The effect of chloroform.** — *Canad. J. comp. Med.* **16,** 216-221. 943

II. RICE, C. E., BOULANGER, P., PLUMMER, P. J. G. & ANNAU, E. (1952). **Parallel studies of complement and coagulation. VI. The effects of acacia gum.**—*Ibid.* 230-235. 944

I. Prolonged inhalation and inj. of chloroform produced a decrease in blood coagulability in g. pigs. There appeared to be a decline in accelerator or labile factors as well as in fibrinogen and prothrombin. There was a definite fall in complement titres after 3 periods of anaesthesia or following inj. of chloroform, but this was less marked than the decrease in coagulability. The first and second components were most affected.

II. Blockade of the liver cells by i/p inj. of gum acacia brought about quantitative and qualitative changes in the serum proteins. It also resulted in a fall of the complement titre. The coagulative activity was less affected. The C'3 component was affected to a greater extent than the others, but all components were below the normal level after 4 weeks' treatment.

—R. GWATKIN.

YOUNG, L. E., O'BRIEN, W. A., SWISHER, S. N., MILLER, G. & YUILE, C. L. (1952). **Blood groups in dogs—their significance to the veterinarian.** — *Amer. J. vet. Res.* **13,** 207-213. 945

With the exception of antibody A, agglutinins occurring in dogs' blood are unlikely to cause haemolytic reaction following transfusion.

Random selection has shown that 63% of mongrels possess A agglutinogen. Haemolytic reactions vary in severity but death is recorded only in cases of haemolytic disease of new-born puppies. It is suggested that "A" negative dogs only should be used as donors and a test to determine "A" positive blood is appended and also a technique for cross matching dog blood samples.—JOHN SEAMER.

DOLL, E. R. (1952). **Observations on the clinical features and pathology of hemolytic icterus of newborn foals.**—*Amer. J. vet. Res.* **13**, 504-508. [Abst. from author's summary.] **946**

Clinical features of haemolytic icterus of new-born foals, foaling histories of the mares and gross and histo-pathological findings in foals dying from the disease were described and the relation of the latter to treatment discussed.

BRION, A. (1952). Les phénomènes d'hétéro- et d'iso-immunisation chez les animaux. Leur rôle en pathologie et en élevage. **[Haemolytic disease of the new-born in animals.]**—*Maroc. méd.* **31**, 597-603. **947**

The first part of this review describes the clinical findings in neonatal icterus of new-born mule foals and their variations in severity. B. recapitulated the theory that a partial separation of the placenta during gestation which causes haemorrhage between the maternal and foetal tissues is the essential origin of the immunisation and supported this evidence by photographs. The cause of this separation is unknown. In the second part the blood groups in man are reviewed and an account is given of the blood groups and possibility of haemolytic disease of the new-born in horses, rabbits, pigs, dogs and cattle.—G. FULTON ROBERTS.

ANON. (1951). **Allergic encephalomyelitis.**—*Brit. med. J.* May 5th, pp. 1002-1003. **948**

Research on febrile neurological complications following virus vaccinations and illness in man has suggested that allergy, rather than activation of a latent neurotropic virus, may be the cause. This is a review of experimental work on the stimulation of brain-specific antibodies by injection of brain tissue in various forms, emphasis being laid on the importance of this work in connexion with all neurological complications characterised by acute perivascular myelinoclasis.—A. H. LINTON.

JANIAK, T., KARWAS, S., KOPROWSKI, J. & RUNGE, S. (1952). Skaza krwotoczna (*Diathesis haemorrhagica*) u bydła **[Haemorrhagic diathesis (haemophilia) in cattle.]**—*Méd. vét. Varsovie.* **8**, 52-56. **949**

A number of deaths after a relatively short illness occurred among young cattle, aged between 7–9 months, both sexes being affected. Clinical signs were bleeding from the nose, subcutaneous haemorrhages visible on hairless parts of the body and in 3–5 days skin eruption. There was an appreciable rise of temperature throughout the illness. Bacteriological and biological examinations proved negative. The authors suggested that this condition affecting young cattle just before they reach sexual maturity is one of allergy or anaphylaxis—treatment on these lines proved of some use.

—J. R. MITCHELL.

AMMANN, K. (1952). Über das anaphylaktische Verhalten des Kaninchen- und Pferdeauges im Experiment. **[Anaphylactic behaviour of the eye of the rabbit and of the horse.]**—*Schweiz. Arch. Tierheilk.* **94**, 614-623. [English, French and Italian summaries.] **950**

Primary and secondary anaphylactic reactions were described. The former followed subscleral injection of an antigen, and consisted of inflammatory changes. A secondary reaction occurred if, after the effects of the first had subsided, the antigen was injected i/v. In addition to the reappearance of eye changes there was pronounced shock.

Lactoflavine and cortisone apparently diminished the reactions.—ROY MACK.

See also absts. **799** (effect of formolized *Bact. coli* on immunity produced by staphylococcal toxoid); **804** (glucoside anthrax vaccines); **812** (B.C.G.); **835** (whey agglutination); **863** (rabbit coccidiosis); **877-882** (F. & M. disease); **885** and **888** (rabies); **892-893** (influenza); **917-918** (swine fever); **921** (dog distemper); **925** (myxomatosis); **933** (*R. prowazeki* antibodies in serum of domestic animals); **941** (allergy to viruses); **958** (immunity of fowls to *Trichinella*); **1083** (preparation of dourine antigens).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

VOGELSANG, E. G. (1951). Miasis lingual del bovino (Bos taurus) por Cochliomyia hominivorax (Coquerel, 1858). **[Lingual myiasis in cattle caused by *Cochliomyia hominivorax*.]**—*Rev. Med. vet., Caracas.* **10**, 105-109. **951**

A note on the distribution of *C. hominivorax* in N. and S. America and its wide range of hosts. The author gave an illustrated description of myiasis of the tongue in cattle caused by *C. hominivorax*.—A.S.

LAIRD, M. (1951). **Insects collected from aircraft arriving in New Zealand from abroad.**—*Zool. Publ. Vict. Univ. N.Z.* No. 11. pp. 30. **952**

The chief air routes to New Zealand are either from Australia or from North America *via* Hawaii, Canton Island and Fiji. The examination of 246 aircraft arriving in New Zealand revealed that 88 were carrying insect stowaways. A total of 548 insects were collected, one third of the total being houseflies. Insects of medical and veterinary interest and which are not established in New Zealand, included four species of wasp, six species of mosquito, *Mansonia crassipes, Aedes aegypti, A. albolineatus, A. tongae, Culex annulirostris* and *C. sitiens* and Calliphorid *Lucilia cuprina*. On two occasions egg masses and emerging larvae of moths have been found on the exterior surfaces of aircraft. Insect control in aircraft and at airports is discussed.—L. K. Whitten.

Huitema, H. (1951). Een mogelijheid voor de biologische bestrijding van luisvliegen. **[Possible control of *Hippobosca* by imported birds (*Acridotheres fuscus*).]**—*Hemera Zoa.* **58, 443-453.** [English, French, German and Indonesian summaries.] **953**

H. suggested importation of the jungle myna (*Acridotheres fuscus*) to the Lower Sunda Islands as a natural enemy of *Hippobosca*.

—C. A. van Dorssen.

Schmidt, H. W. (1949). Übertragungszyklus der Scabies: Fuchs-Hund-Mensch. **[Transmission of scabies: fox-dog-man.]**—*Schweiz. Arch. Tierheilk.* **91, 398-404.** **954**

S. investigated an outbreak of mange among foxes and badgers, during which the disease was transmitted to dogs and human beings coming into contact with infected animals.

He denied that there is species-specificity in *Sarcoptes scabiei*, asserting rather that the parasite assumes different habits with different hosts.

The symptoms and course of mange in the fox were discussed.—Roy Mack.

See also absts. **847** (tsetse control in Gambia); **988** (insect vectors of some protozoan diseases); **1090-1091** (reports, Australia); **1093** (report, Pakistan); **1095** (report, Swaziland).

PARASITES IN RELATION TO DISEASE [HELMINTHS]

Krull, W. H. & Mapes, C. R. (1952). **Studies on the biology of *Dicrocoelium dendriticum* (Rudolphi, 1819) Looss, 1899 (Trematoda : Dicrocoeliidae), including its relation to the intermediate host, *Cionella lubrica* (Müller). IV. Infection experiments involving definitive hosts.**—*Cornell Vet.* **42, 277-285.** [For part III, see *V.B.* **22, 3441.**] **955**

Sheep, rabbits, and mice fed with *C. lubrica* snails infected with sporocysts of *D. dendriticum* remained free from flukes. The feeding of fresh and dried slimeballs containing cercariae, also failed to produce fluke infestation. Sheep fed grass clipped from a contaminated pasture became infested with flukes. One fluke was collected from the liver of one of two sheep fed washed grass, but sheep fed grass washings, and the screenings of grass, remained free from flukes.—D. W. Jolly.

Jepsen, A. & Roth, H. (1950). Parasitologiske og bakteriologiske problemer vedrørende spildevand, specielt i forbindelse med oversprøjtningsmetoden. Undersøgelser over forekomsten af aeg af Taenia saginata i bespildevand samt iagttagelser over fordelingen af Cysticercus bovis hos tintede kalve. **[Parasitological and bacteriological problems of sewage disposal, especially with regard to the sprinkler irrigation method. Occurrence of eggs of *Taenia saginata* in city sewage and distribution of *Cysticercus bovis* in calves.**—*Nord. Vet.-Med.* **2, 967-991.** [In Danish. English and German summaries.] **956**

The incidence of *C. bovis* in Danish cattle has steadily increased since 1942; in calves the increase has been 17-fold. *T. saginata* infestation in human beings has also been steadily increasing.

Of 20 healthy calves put out to graze at four weeks of age on land which had been dressed with city sewage by the sprinkler method, all were found when slaughtered 4-5½ months later to be harbouring *C. bovis*. The entire carcasses were cut into thin slices and examined; in only four of the carcasses were the cysts detectable by the conventional meat inspection routine.

Study was also made of the hazard of airborne spread of bacterial and viral infection by the use of this method of utilization of sewage, by the cultivation of agar plates exposed at various distances from the site of the sprinkler. It was found that *Bact. coli* were carried by the wind as far as 392 metres.—John C. Cowne.

Renner, H. (1951). Über die Möglichkeit der Verbreitung von Ascaris lumbricoides durch Abwasserverregnung und Düngung mit Abwasserschlamm. **[*Ascaris lumbricoides* ova in sewage sludge.]**—*Inaug. Diss., Munich.* pp. 36. **957**

Sludge and supernatant fluids from the Munich sewage-works are used to manure fields in which vegetables are grown. In egg-count

tests on the soils of these fields and the produce from them R. could discover no viable eggs of *A. lumbricoides,* and concluded that the sewage waste could safely be used as a fertilizer.—A.S.

RAIL, W. (1951). Infektionsversuche mit Trichinella spiralis zur Prüfung der Immunitätsgründe beim Geflügel. [**The immunity of poultry to *Trichinella spiralis*.**]—*Inaug. Diss., Munich.* pp. 50. **958**

The immunity of fowls to *T. spiralis* breaks down under severe malnutrition. Fowls emaciated from starvation can be infected either by direct injection of trichinosed material into the muscles or by means of infected foodstuffs.

—M. L. CLARKE.

PRÜGELHOF, F. (1952). Natriumfluorid als Wurmmittel beim Schwein. [**Sodium fluoride as an anthelmintic for swine.**]—*Wien. tierärztl. Mschr.* **39,** 490-495. [English, French and Italian summaries.] **959**

Sodium fluoride was found to be effective against ascarids, *Strongyloides* and *Oesophagostomum* and probably against *Trichuris* in pigs at 0·3 g./kg. body wt., divided into three doses, the max. dose being 10 g. per meal.

—R. MARSHALL.

CHOQUETTE, L.-P.-E. & GAYOT, G. (1952). *Tenuiproboscis sergenti* nov. sp., acanthocéphale trouvé chez le chien à Alger. [*Tenuiproboscis sergenti,* **n. sp. (Acanthocephala) in the dog.**]—*Arch. Inst. Pasteur Algér.* **30,** 51-54. **960**

An account of a new species, named *T. Sergenti,* from stray dogs in Algiers. The authors considered that fish was probably the source of infection.—A.S.

See also absts. **1091** (report, Australia); **1100** (report, Leeward Islands).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

MONTPELLIER, J.-M., SAMSO, A. & CATANEI, J. (1952). Le cancer de l'utérus en pathologie vétérinaire. [**Cancer of the uterus in domestic animals.**]—*Bull. Algér. Carcinologie.* **5,** No. 13. pp. 45-56. **961**

A review of species and type incidence of some recorded neoplasms in the uterus of domestic animals. [Over half of the authors named in the text do not figure in the list of references given.]—E. COTCHIN.

DAVIS, O. S. (1952). **Studies in avian leukosis. VI. Serial passage of a highly malignant strain of visceral lymphomatosis in young chickens.**—*Amer. J. vet. Res.* **13,** 105-107. **962**

In 30 and 15 serial passages in young chicks of avian visceral lymphomatosis strain RPL 16, visceral lymphomatosis developed in an average of 90·18% and 87·75% of chicks respectively, death occurring at an average of 10·6 and 10·06 days after inoculation; lesions were present in the local site of injection in 88·73% and 99·45% of cases, and in the liver in 95·82% and 91·97% of cases, in the different groups of chicks inoculated at each passage.—E. COTCHIN.

See also abst. **1089** (report, Northern Ireland).

NUTRITIONAL AND METABOLIC DISORDERS

MCINTYRE, R. T., PARRISH, D. B. & FOUNTAINE, F. C. (1952). **Properties of the colostrum of the dairy cow. VII. pH, buffer capacity and osmotic pressure.**—*J. Dairy Sci.* **35,** 356-362. **963**

The pH of milk rises from 6·28 at parturition to 6·5 at 14 days *post partum.* Osmotic pressure and buffering capacity of colostrum are greater than those of milk.—JOHN SEAMER.

BEIJER, W. H. (1952). **Methane fermentation in the rumen of cattle.** [Correspondence.]—*Nature, Lond.* **170.** 576-577. **964**

Various substances were incubated at 40°C. for 4–6 hours with ruminal fluid obtained by means of a fistula from a goat. Any gas produced was examined for methane. Formic acid proved to be the best source of methane, the recovery being 80% of the theoretical. Succinic acid also gave rise to methane but acetate, propionate, and butyrate were not fermented by the microflora of the goat's rumen.

—J. A. NICHOLSON.

ARNOLD, A. & GOBLE, F. C. (1950). **Studies with dogs fed flour treated with ammonium persulfate.**—*Cereal Chem.* **27,** 375-382. **965**

Dogs fed amounts of ammonium persulphate up to more than 200 times those which would normally be used in maturing flour, showed no ill effects.—CHARLOTTE M. WOOD.

COMBS, G. F. (1952). **Algae (*Chlorella*) as a source of nutrients for the chick.**—*Science.* **116,** 453-454. 966

Dried *Chlorella* was added to a chick diet considered low in riboflavin, vitamin B_{12} and vitamin A. The results suggest that *Chlorella* can supply significant quantities of carotene and of the vitamin B complex. The amino acid estimation of *Chlorella* was given.—D. LUKE.

SCHAMBYE, P. (1951). **Volatile acids and glucose in portal blood of sheep. III. The influence of orally administered glucose.**—*Nord. Vet.-Med.* **3,** 1003-1014. [In English. German and Danish summaries. Abst. from English summary.] 967

Glucose administered orally to sheep does not markedly increase portal blood sugar as it does the volatile acid concentration. It is suggested that ruminal fermentation is directly affected by the glucose concentration of ruminal liquor.—JOHN SEAMER.

FRENCH, C. E., INGRAM, R. H., KNOEBEL, L. K. & SWIFT, R. W. (1952). **The influence of dietary fat and carbohydrate on reproduction and lactation in rats.** — *J. Nutr.* **48,** 91-102. 968

An account of studies on feeding trials with albino rats over three generations. The control diet (a complete rat diet, details of which are given) was mixed with (a) 20% of maize oil and (b) 20% of sucrose. The rats fed the high-fat diet produced smaller litters of lighter weight young. Lactation was not impaired in the rats in this group, but it was significantly improved in the rats fed the high carbohydrate diet, the young in this group gaining about 7% more weight.—F.E.W.

RAULIN, J. (1951). Les effets généraux et l'action stérilisante du cholestérol ajouté à un régime riche en acides gras polydésaturés. **[Effects and sterilizing action of cholesterol added to a diet containing unsaturated fatty acids.]**—*C. R. Acad. Sci., Paris.* **233,** 1318-1320. 969

In female white rats fed a diet rich in unsaturated fatty acids to which 3% cholesterol had been added there were diarrhoea, cessation of growth and some deaths. In pregnant animals there was resorption of the foetus; characteristic eye lesions were also noted. Ill effects from excess of cholesterol were not seen when either margarine or lard was the source of dietary fat.
—J. A. NICHOLSON.

TAVONI, V. (1952). I fattori lipotropi in medicina comparata. **[Lipotropic factors in comparative medicine.]**—*Riv. Med. vet. Zootec.* **4,** 1-18. 970

T. reviewed the literature relating to the properties, metabolism and clinical uses of choline, methionine, betain and their derivatives, as well as of inositol and lipocaic (a hormone-like substance in the pancreas which prevents deposition of lipoids in the liver), and discussed their potential usefulness in veterinary medicine, *e.g.* in cirrhosis of the liver, Düren disease and other deficiency syndromes.
—G. P. MARSHALL.

HIGHMAN, B. & DAFT, F. S. (1951). **Calcified lesions in C3H mice given purified low-protein diets. Tissues involved: heart, skeletal muscles, arteries, and lungs.**—*Arch. Path.* **52,** 221-229. 971

A study was made of the effects of a diet low in protein and deficient in choline on the incidence of hepatomas induced by carbon tetrachloride. Weanling C3H mice fed the diet usually died within 3 weeks, but mice fed a stock diet for 2–5 months before beginning deficient diet were more resistant. A description is given of extensive necrosis and calcification of cardiac and skeletal muscles, arterial and pulmonary calcification and other pathological changes occurring in mice fed the deficient diet. Supplementation of diet with choline or α-tocopherol did not prevent the necrosis or calcification. The lesions are believed to be due to disturbed metabolism of compounds, like the vitamin D sterols in animals fed abnormal diets.
—D. MCALEESE.

DUNCAN, C. W., WATSON, G. I., DUNN, K. M. & ELY, R. E. (1952). **Nutritive values of crops and cows' milk as affected by soil fertility. II. The essential amino acids in colostrum and milk proteins.**—*J. Dairy Sci.* **35,** 128-139. 972

No significant difference was found between the essential amino acid content of colostrum and milk protein of cows given feeds grown on highly fertilized or depleted soils of the same type.—CHARLOTTE M. WOOD.

BUCHNEV, K. N. (1952). **[Some data on the "urov" disease in farm animals.]**—*Veterinariya, Moscow.* **29,** No. 5. pp. 27-28. [In Russian.] 973

The aetiology of the so-called "urov" disease is unknown, although references to it date from 1849. It affects cattle, sheep, pigs, horses, fowls and geese. Symptoms of osteomalacia, rickets and avitaminosis appear simultaneously with goitre. Detailed clinical pictures were described. From observations made by

B. in the region of the river Zei in south-eastern Siberia, it appears that the disease is mainly due to some lack of Ca and I in the soil which is marshy with a permanently frozen subsoil, the water being deficient in most minerals.—F.A.A.

WILSON, J. G. (1952). **Herd functional infertility, with reference to nutrition and mineral intake.**—*Vet. Rec.* **64,** 621-623. 974

Infertility in cows in which there was no evidence of infection and which was characterized by a number of the animals remaining anoestrous even in the summer is recorded. Analysis of the food showed that it was low in protein and phosphate. The addition of either 3 oz. of acid sodium phosphate or a mixture of 15 g. manganese sulphate, 1 g. copper sulphate and 240 mg. potassium iodide daily in the food markedly increased the fertility rate, the best results being obtained with the trace element mixture.—J. A. NICHOLSON.

BUTT, A. J. & HAUSER, E. A. (1952). **The importance of protective urinary colloids in the prevention and treatment of kidney stones.**—*Science.* **115,** 308-310. 975

Observations have shown that the incidence of human renal calculus is inversely proportional to the degree of urinary protective colloids present. Hyaluronidase injected s/c has been found to increase these colloids and acts as a dispersing agent for urinary crystalloids.

—JOHN SEAMER.

JORDAN, R. M. (1952). **Aureomycin supplements in lamb fattening rations.**—*J. Anim. Sci.* **11,** 566-571. 976

Aureomycin did not produce heavier lambs when fed as a supplement. Evidence is presented to show that it may have given some slight protection from enterotoxaemia.

—G. B. S. HEATH.

WILSON, J. E. (1952). **Effect of adding penicillin to turkey starter mash.** [Correspondence.]—*Nature, Lond.* **169,** 715-716. 977

Turkey poults fed a standard mash containing small amounts of penicillin (12·5 g. per ton) not only had increased growth rates but lower rates of mortality in the first weeks of life than controls. W. stated that its administration to table birds would appear to be strongly indicated.—CHARLOTTE M. WOOD.

SWICK, R. W., GRUMMER, R. H. & BAUMANN, C. A. (1952). **The effect of thyroid on carotenoid metabolism in swine.**—*J. Anim. Sci.* **11,** 273-281. 978

Groups of pigs, 8–14 weeks old, were depleted of vitamin A and were then treated with either iodinated casein (hyperthyroid group) or thiouracil (hypothroid group). Both groups were then given carotene and both groups accumulated vitamin A in amounts comparable to control pigs.—D. LUKE.

JUCKER, H. (1952). Recherches sur le complexe vitaminique B. **[The vitamin B complex.]**—*Proc. VIth int. Congr. anim. Husb., Copenhagen,* 1952. **2,** 113-124. [In French. English, German and Danish summaries.] 979

A short general account of the work being carried out in Switzerland on the vitamin B complex. Diarrhoea in young pigs has been associated with a vibrio infection combined with a B_1 deficiency, the deficiency being probably due to faulty absorption resulting from damage of the intestinal wall. Anti-aneurin factors are present in plants and their presence in abnormal amounts in hay has been associated with the occurrence of chronic haemolytic disease of cattle. A possible relationship between a B_2 deficiency and periodic ophthalmia in horses has been established. Nicotinamide injections appear to be of some value in the treatment of streptococcal infections of the horse. Preliminary experiments in replacing APF by B_{12} in the rations of pigs and poultry are reported.

—J. A. NICHOLSON.

HSU, P.-T. & COMBS, G. F. (1952). **Effect of vitamin B_{12} and amino acid imbalances on growth and levels of certain blood constituents in the chick.**—*J. Nutr.* **47,** 73-91. 980

When certain amino acids were fed at a high level to vitamin B_{12} deficient chicks, there was an inhibition of growth which was counteracted by administration of vitamin B_{12}.

—R. MARSHALL.

FABIANEK, J., NEUMANN, J. & LAROLLAY, J. (1952). A propos de la notion de vitamine P. chez le cobaye. L'acide ascorbique suffit à éviter la fragilité vasculaire et les hémorragies pendant un an. **[Vitamin P. Prevention of vascular fragility and haemorrhage with vitamin C.]**—*C. R. Acad. Sci., Paris.* **234,** 894-896. 981

A diet devoid of flavanolis and tannoids with ascorbic acid added was sufficient to prevent vascular fragility and haemorrhage.

—R. MARSHALL.

BERGH, H. & EIELAND, E. (1950). **Studies on the metabolism of copper using radiocopper Cu-64. Secretion in cow's milk and excretion in cow's urine and faeces of administered copper.**—*K. norske vidensk. Selsk. Forh.* **23,** 52-54. [In English. Abst. from authors' conclusion.] 982

After oral administration of radio-copper

Cu-64 to a cow, 9·4% was secreted in the milk, 0·8% excreted in the urine, and 70% in the faeces within 100 hours. The isotope was not detectable after this period.

LUTWAK-MANN, C. (1951). **Some aspects of phosphorus metabolism in bone marrow.**—*Biochem. J.* **49**, 300-310. **983**

A study of the effects of enzyme action, undernourishment, vitamin deficiency, mustard gas and X-rays on the acid soluble phosphate, adenosinetri-phosphate and nucleic acid phosphorus portions of rabbit and rat bone marrow.
—JOHN SEAMER.

KRACHT, J. & KRACHT, U. (1952). Zur Histopathologie und Therapie der Schreckthyreotoxikose des Wildkaninchens. **[Histopathology and treatment of fright-thyrotoxicosis in wild rabbits.]**—*Virchows Arch.* **321**, 238-274. **984**

Untreated fright-thyrotoxicosis is fatal in wild rabbits. Prolongation of life is possible by thyroidectomy or administration of anti-thyroid preparations (methylthiouracil, "thiothyr") and of iodine or by a combination of both methods. Epithelial growth is demonstrable after administration of anti-thyroid drugs; after iodine there is shrinkage. Vitamin A therapy was ineffective.—H. BEHRENS.

ANON. (1952). **The cause of simple goitre.**—*Lancet.* **262**, 549-550. **985**

A goitre is always a compensatory phenomenon, a deficient production of thyroxin stimulating the pituitary gland to make more thyrotropic hormone, which then reacts on the thyroid. The cause of goitre is anything which prevents or hinders the formation of thyroxin. Lack of iodine causes goitre, and where goitre is endemic, the iodine content of soil, water and locally-grown vegetables is almost certain to be low. Rats fed on a diet low in tyrosine, which also occurs in thyroxin, and in phenylalanine, from which tyrosine is readily formed, develop goitre. The thiocyanate ion prevents the thyroid from concentrating the iodide of the blood. Thiourea inhibits the oxidation of iodide to iodine, thus hindering thyroxin formation; a thiourea derivative is present in turnips and swedes, and, in view of the winter feeding of cattle on roots, it is possible that this derivative reaches human beings *via* the milk. Such an antithyroid substance does not account for the goitre in rabbits fed on cabbage diets, and this can perhaps be more reasonably attributed to thiocyanate.
—E. COTCHIN.

See also abstr. **1034** (defluorination of superphosphate solutions for use in animal nutrition); **1090** (report, Australia); **1106** (conference, metabolic interrelations); **1107** (book, assay of vitamin B complex and amino acids).

DISEASES, GENERAL

ANON. (1951). **The 18th Statistics of Animal Hygiene.** pp. 88. Japan: Bureau of Animal Industry. Ministry of Agriculture and Forestry. [In Japanese and English.] **986**

The report deals with the statistics for 1949 under the headings:— mortality of animals, infectious diseases of animals, biological products and quarantine. On infectious diseases of animals the incidence of 19 official diseases are shown monthly by prefectures with their outcome, and also the incidence of these diseases during the past 20 years. The general aspects of production of veterinary biological products, and their assay and application are listed. The most important diseases, TB. in cattle, equine Japanese B encephalitis and equine infectious anaemia are dealt with in more detail. The statistics for reference include animal census during the past 9 years, numbers enrolled in animal insurance (1948 fiscal year), number of veterinarians and shoesmiths, number of abattoirs and animals slaughtered, number of officials in charge of animal hygiene, results of breeding stock inspection and number of pharmaceutical inspectors. All tables are annotated in English.—KOGI SAITO.

KUHN, H. (1952). Untersuchungen über Entwicklungsstörungen in einem Fohlenaufzuchtbetrieb. **[Unthriftiness in a foal-rearing establishment.]**—*Schweiz. Arch. Tierheilk.* **94**, 171-186 & 242-259. [English, French and Italian summaries.] **987**

Regular clinical examination of 120 foals, 6–18 months old, was carried out for six months. Ascaris infestation and respiratory disease were the main causes of unthriftiness. Strongylosis did not affect growth. Equine infectious anaemia was not diagnosed.—ROY MACK.

GUERRERO, R. P. (1951). Los problemas de patologia pecuaria que obstaculizan el desarrollo de la ganaderia en los climas tropicales del hemisferio occidental. **[Diseases of cattle which hinder the livestock industry in**

the Western Hemisphere (Salmonellosis, piroplasmosis and trypanosomiasis).]—*Rev. Fac. Med. vet., Bogotà.* **20,** 285-289. **988**

A plea for intensive research on an international scale on salmonellosis in calves and for an international campaign against the insect vectors of such diseases as piroplasmosis and trypanosomiasis.—I. W. JENNINGS.

TRAUTWEIN, K. (1949). Tierseuchen und Desinfektion. [**Infectious diseases of animals and disinfection.**] — *Desinf. u. Schadlingsbek. Ausg. A.* **41,** 7. Abst. in *Zbl. Bakt. I. (Ref.)* **149,** 204. **989**

Disinfection of stables is carried out in Baden (Germany) by officials known as Stable Disinfectors, trained at the Institute of Animal Hygiene of the University of Freiburg and employed by the local authority on a part time basis. The procedure has been found satisfactory.—W. T. THOMPSON.

TEN THIJE, J. H. (1952). Traumatische gastritis en-pericarditis bij het rund. [**Traumatic gastritis/pericarditis in cattle.**]—*Tijdschr. Diergeneesk.* **77,** 321-329. [English summary.] **990**

As a rule the penetration of a foreign body through the gastric wall in cattle is slow. The actual perforation is preceded by a local fibrinous peritonitis. The foreign body on its way to the diaphragm does not therefore penetrate the abdomen itself, but passes through the fibrinous adhesions. In many cases the perforation heals spontaneously: 42 of 100 clinically normal slaughtered cows had adhesions, the foreign body being still present in 8 cases. The author advises surgical removal only in cases which fail to respond to conservative treatment, but this involves the risk of serious complications.

—C. A. VAN DORSSEN.

KRISPIEN, H. (1952). Beitrag zur Diagnostik von Leberschäden beim Rind in der Praxis. [**Diagnosis of liver disease in cattle.**]—*Tierärztl. Umsch.* **7,** 118-122. **991**

As a result of his study of 49 cases of suspected liver disease in cattle, K. recommended among practical field aids to diagnosis, the testing of urine for the presence of bilirubin by Gmelin's test, and by the methylene blue test and for the presence of urobilinogen by Ehrlich's test. The tincture of iodine test for bile pigment is not applicable to cattle urine.

—E. COTCHIN.

STAMP, J. T. (1951). **Sheep diseases.**—*Bull. Edinb. & E. Scot. Coll. Agric.* No. 26. pp. 35-55. **992**

A conventional description of some common diseases of sheep.—G. B. S. HEATH.

CSONTOS, J. & HIRT, G. (1951). Recherches expérimentales sur l'étiologie de la gastro-entérite infectieuse des porcs. [**Infectious gastro-enteritis of pigs.**]—*Acta vet. hung.* **1,** 205-222. [In French. Russian summary.] **993**

Histological examination of the large intestines of pigs with infectious gastro-enteritis revealed the presence in every case of *Leptospira* organisms which the authors consider provisionally to be the cause of the disease. Although infection in otherwise healthy animals is benign, it becomes severe when for any reason the general resistance is lowered.—A.S.

ANON. (1952). La malattia degli edemi dei suini. [**Oedema disease of pigs.**]—*Gazz. vet., Milano.* No. 1. 2-7. **994**

In Italy the disease occurs sporadically with a pronounced predilection for recently weaned piglets. Oedema of the eyelids and of the glottis is an almost constant clinical sign.

—I. MARTINI.

DEBARD, H. (1950). Contribution à l'anatomie pathológique du disque intervertébral chez les carnivores. [**The pathology of the intervertebral disc in carnivores.**]—*Thesis, Alfort.* pp. 56. **995**

In this illustrated thesis, based on a study of 35 affected dogs and 3 affected cats, D. described the development and structure of the normal intervertebral disc and discussed the occurrence and development of the vertebral osteophytes which are found quite commonly in dogs, particularly with advancing age, but are only rarely seen in cats. These osteophytes occur on the ventrolateral aspects of the vertebral column, and are found most often in the posterior dorsal and lumbar regions. Their presence is always accompanied by lesions of the intervertebral discs, and the lesions appear to be responsible. D. suggested that, as the animal ages, the degenerative changes occurring in the nucleus pulposus of the disc result in a loss of elasticity, so that, instead of returning to its normal position following ventral displacement which occurs with the normal movements of the vertebral column, the nucleus of the disc may become displaced or herniated ventrally. In this way, the annular fibres of the ventral part of the disc are caused to bulge downwards, and so come to press on and deform the inferior common ligament as it passes beneath them. As a result of the tension thus put on the ligament at its attachments to the vertebral bodies, osteogenesis occurs on either side of the disc, with

the result that osteophytes form with their bases a little way from the edge of the articular surface at the end of the vertebral body. Clinical signs may include pain and stiffness, and some ankylosis. There may also be interference with the movements occurring with defaecation, and with respiration.—E. COTCHIN.

SCHRÖTER, A. (1952). Über den enzootischen Herztod bei Hühnern. **[Round heart disease in fowls.]**—*Mh. VetMed.* **7**, 271-273. **996**

A discussion on the present state of knowledge concerning round heart disease in fowls. Artificial rearing conditions seemed to favour the disease though the level of nutrition appeared to have no influence.

Young birds seemed more susceptible, but there was no evidence of particular breed incidence.—A.S.

ANON. (1952). **Turkey troubles.**—*Ext. Circ. Wash. St. Coll. Agric.* No. 148. [Revised.] pp. 6. **997**

A brief general account of common diseases of turkeys in Washington State, U.S.A.

—E. A. GIBSON.

FOX, R. A. (1952). **So-called "cat scratch fever".**—*Arch. Path.* **54**, 75-83. [Author's summary modified.] **998**

Of four cases presumed to be "cat scratch fever", only two were associated with "cat scratch". The histological appearance of the involved lymph nodes examined in the four cases was strikingly similar and was indistinguishable from that of tularaemia. Agglutination tests against *Brucella tularensis* were negative.

The disease was only slightly incapacitating and was self-limited without specific therapy. The aetiological agent and the mode of transmission have not been established. Although domestic cats are associated with a high percentage of cases, the disease occurs in the absence of known contact with cats.

See also absts. **1089** (report, Northern Ireland); **1094** (report, Northern Rhodesia); **1096-1097** (reports, Basutoland); **1105** (book, diseases of fur-bearing animals); **1109** (book, veterinary *vademecum*).

POISONS AND POISONING

ORR, A. B. (1952). **Poisoning in domestic animals and birds. An analysis of 360 consecutive cases.**—*Vet. Rec.* **64**, 339-343. **999**

The main causes of poisoning of animals in Britain were phosphorus in poultry; zinc phosphide in cattle and fowls; arsenic in cattle, sheep and poultry; lead in cattle; strychnine in dogs; and sodium chloride in pigs and fowls.

—R. MARSHALL.

MÁTHÉ, J. (1952). Alkalmas-e emberi fogyasztásra az arzénmérgezés miatt kényszervágott állatok húsa? **[Risk attending ingestion of meat from cattle poisoned with arsenic.]**—*Mag. allatorv. Lapja.* **7**, 305-309. [English and Russian summaries. Abst. from English summary.] **1000**

The meat of animals which had either consumed lethal quantities of arsenic or had consumed small quantities of arsenic over a long period did not contain sufficient arsenic to be harmful to human beings who might eat it.

—R. MARSHALL.

ANON. (1952). **Cause of X disease identified.**—*J. Amer. vet. med. Ass.* **121**, 194. **1001**

Dosing cattle with pentachloronaphthalene produced X disease (hyperkeratosis). Similar compounds are present in various products used on farms, but none were found in feeds producing X disease.—IAN DAVIDSON.

GUILHON, J., DRIEUX, H. & JULON, L. (1950). Histologie des lésions du syndrome hémorragique des bovidés bretons. **[Histology of the lesions in the haemorrhagic syndrome in Breton cattle.]**—*C.R. Acad. Sci., Paris.* **230**, 1325-1326. **1002**

The authors spoke of the condition as being of undetermined aetiology and referred to the possibility that it might be bracken poisoning. Histological study of the liver, lungs, spleen, kidneys and adrenal glands of five calves revealed hepatic degeneration with oedema, slight alveolar emphysema, heavy deposition of haemosiderin in the spleen which had an abnormally large r.b.c. content, degeneration of the epithelium of the convoluted tubules in the renal cortex, congestion of the renal medulla and slight congestion and hyperaemia of the adrenal cortex.—ANITA M. MANDL.

MERRILL, S. D. (1952). **Apple poisoning in dairy cows.**—*Vet. Med.* **47**, 405-406. **1003**

An account of indigestion and poisoning caused by eating excessive amounts of apples, especially when unripe.

NORDFELDT, S., HENKE, L. A., MORITA, K., MATSUMOTO, H., TAKAHASHI, M., YOUNGE, O. R., WILLERS, E. H. & CROSS, R. F. (1952). **Feeding tests with *Indigofera endecaphylla* Jacq. (creeping indigo) and some**

observations on its poisonous effects on domestic animals.—*Tech. Bull. Hawaii agric. Exp. Sta.* No. 15. pp. 23. **1004**

Creeping indigo when included in pastures at a level of less than 50% of the forage was not harmful, but above this level toxic symptoms occurred and there was abortion in cows, sheep and rabbits. In advanced cases there was motor nerve disturbance with severe irregularities of gait. Continued feeding with the plant caused death. The liver was the main vital organ affected.—R. MARSHALL.

BIDDULPH, C., BATEMAN, G. Q., HARRIS, J. R., MANGELSON, F. L., LIEBERMAN, F. V., BINNS, W. & GREENWOOD, D. A. (1952). **Effect of feeding methoxychlor-treated alfalfa hay to dairy cows.**—*J. Dairy Sci.* **35**, 445-448. **1005**

Dusting alfalfa crops, for the control of larvae of the alfalfa weevil with methoxychlor in pyrophyllite carrier at the rate of 1, 2 and 2·8 lb. per acre had no ill effect on cattle consuming the hay subsequently made from the crop.—C. A. E. BRIGGS.

CARPENTER, C. P., CRITCHFIELD, F. H., NAIR, J. H. & SHAFFER, C. B. (1951). **Toxicology of two butoxypolypropylene glycol fly repellents.** —*Arch. industr. Hyg.* **4**, 261-269. [Abst. from abst. in *Bull. Hyg., Lond.* **27**, 174-175. (1952).] **1006**

The glycols were administered to rats, rabbits and g. pigs to ascertain the effects, if any, of inhalation, skin penetration, skin irritation and dermal sensitization. Butoxypolypropylene glycol 400, given by stomach tube in a 50% aq. sol., had an LD_{50} of 5·84 g./kg. The concomitant symptoms were sluggishness, gasping, tremors, and convulsions, as the dosage levels increased. Death often ensued in four hours, but no animal died after 24 hours. Autopsies revealed only congestion of the liver and the gastro-intestinal tract. A 50% dispersion of butoxypolypropylene glycol 800 had an LD_{50} of 9·16 g./kg. in rats and, if given undiluted to rabbits, of 23·7 ml./kg. Smaller doses given over long pediods did not bring anything much to light. Nor did it appear that damage, other than erythema, was caused to the skin. Glycol 400 was readily absorbed from the digestive tract, some being excreted in the urine in the form of a water-sol. derivative; glycol 800 was less easily absorbed. Analyses of animals fed for 30 days on 5% glycol 400 indicated that no storage of the compound occurred in the animals. Exposures normally to doses approaching LD_{50} are improbable, and the investigations here recorded demonstrate that the chances are small of adverse effects resulting from the repellent gaining access to the body by inhalation, skin penetration, skin irritation or dermal sensitization.

ANON. (1952). **Danger of chloramphenicol.**—*Brit. med. J.* July 19th, 136-138. **1007**

Chloramphenicol is often the cause of a fatal aplastic anaemia, particularly in children. It should be used for human beings only in cases of typhoid fever. The toxic effects are probably due to the nitrobenzene moiety.

—MALCOLM WOODBINE.

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

LORA, J. (1952). Contribución al estudio práctico de la electroterapia en clinica veterinaria. **[Electrotherapy in veterinary medicine.]**—*Veterinaria, Madrid.* **16**, 293-308. **1008**

A general discussion of the methods used in electrotherapy in horses and of the conditions which respond to it.—A.S.

RAVDIN, I. S. (1952). **Plasma expanders.**—*J. Amer. med. Ass.* **150**, 10-13. [Author's summary modified.] **1009**

The search for the perfect plasma expander is by no means at an end. Additional chemical, physiological, and clinical work must be carried out with the agents at present available in the hope that they may be improved on. The tools for evaluation of plasma expanders will have to be sharpened, and some semblance of standardization would be most desirable, both for clinical testing in human patients and for testing in laboratory animals.

DI RAIMONDO, F. (1951). *In vitro* and *in vivo* **antagonism between vitamins and antibiotics. A preliminary report.**—*Int. Z. Vitaminforsch.* **23**, 1-12. [Abst. from abst. in *Bull. Hyg., Lond.* **27**, 362-363. (1952).] **1010**

The author showed that *in vitro* certain vitamins reduce the activity of streptomycin and penicillin, but in some cases increase that of aureomycin and chloramphenicol. In this paper he described *in vivo* studies: *Staph. aureus* grown in broth enriched with niacinamide, folic acid, *p*-aminobenzoic acid or pyridoxine hydrochloride was not only more resistant to penicillin *in vitro*, but caused a higher mortality in peni-

cillin-treated mice than did normal culture. It was also found that by feeding pyridoxine to mice they were rendered more susceptible to this infection, which was then less amenable to treatment with penicillin. [The differences in mortality were small, but were stated to be significent. Unfortunately the mortality in controls was of the order of only 70%.]

PÉREZ Y PÉREZ, F. (1952). La anestesia en circuito cerrado aplicado a los pequeños animales domésticos. **[Intratracheal administration of anaesthetics in domestic animals.]**—*Veterinaria, Madrid.* **16,** 711-721. **1011**

A detailed description of equipment for the intratracheal administration of anaesthetics to dogs, cats, and other small animals.—A.S.

I. BURNS, R. H. G. (1952). **A review of veterinary anaesthesia. Part I.**—*Aust. vet. J.* **28,** 313-322. **1012**

II. LARSEN, L. H. (1952). **Recent advances in anaesthesia. Part II.**—*Ibid.* 323-331. Discussion pp. 331-332. **1013**

I & II. In these reviews, presented to the annual conference of the Australian Veterinary Association, Burns dealt with anaesthesia of horses, dogs, cats, cattle, sheep and swine, and Larsen stressed the aspects of the effect of the anaesthetic on the patient, and mortality associated with anaesthesia. Both authors included comments from personal observations.

—D. A. GILL.

See also absts. **828** (chloramphenicol for calf paratyphoid); **849** (antrycide); **850** (phenanthridinium); **851** (suramin); **856** (antibiotics); **959** (anthelmintic); **1006** (toxicology of fly repellents); **1007** (chloramphenicol); **1085** (insecticides); **1108** (book, antibiotics).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

SCACCINI, A. (1951). Sulle fasce dell'arto posteriore del cavallo. **[The fascia and muscular insertions of the hind-limb of the horse.]**—*Arch. Vet. Ital.* **2,** 129-151. [English, French, German and Spanish summaries.] **1014**

S. has continued Chiodi's studies (1928) of the anatomy of the horse, using the same technique. He gave a detailed description of the fascia and muscular insertions of the hind-limb of the horse.—J. A. NICHOLSON.

BONFANTI, C. (1947). Sulla struttura del muscolo ciliare di alcuni mammiferi domestici (cavallo, asino, bue, pecora, capra, cane, gatto). **[Structure of the ciliary muscle in the horse, donkey, ox, sheep, goat, dog and cat.]**—*Ateno parmense.* **18,** 70-81. **1015**

In the ciliary muscle in the horse, donkey, ox, sheep, goat, dog, and cat, most of the fibres have a meridional direction; only in the cat can circular fibres be found. The muscle has probably some importance in the regulation of the blood circulation of the iris.—M. BERTANI.

FRASER, A. S. (1952). **Growth of wool fibres in sheep.**—*Aust. J. agric. Res.* **3,** 419-434. **1016**

This is a theoretical treatment of the shapes and growth rates of different types of wool fibres in the coats of lambs, based on acceptance of the evidence of Fraser, Ross and Wright (unpublished) for the relation of fibre types to follicle types, of Barker and others for crimp as a function of time, and of Galpin for the dependence of wool weight on skin surface area. The general pattern of fibre types is consistent with the view that follicles are in competition for fibre "substrate" in the skin, and that follicles formed at different times have different levels of efficiency in this competition.—M. H. HARDY.

FRASER, A. S. (1952). **Growth of the *N*-type fleece.**—*Aust. J. agric. Res.* **3,** 435-444. [Author's summary slightly modified.] **1017**

The rates of growth of wool fibres were compared between normal and N-type Romney Marsh sheep. The three types of follicles—primaries and first- and second-wave secondaries—form their fibres at rates of the same order in normal Romneys. The N and *nr* genes cause an increase in the rate of growth of the early primary fibres, and a decrease in the rate of growth of late fibres, having no marked effect on fibres initiated between these two periods. It is argued that the primary effect of these genes is to increase the efficiency of competition of the early initiated follicles, resulting in an increased growth rate of their fibres, which, owing to competition between follicles, results in a proportionate decrease in the growth rate of the late fibres.

FRASER, A. S. & SHORT, B. F. (1952). **Competition between skin follicles in sheep.**—*Aust. J. agric. Res.* **3,** 445-452. [Authors' summary slightly modified.] **1018**

Samples of skin from three sheep (Ryeland, Lincoln, and Merino) were sectioned, and measurements made of the diameters and spatial relationships of the wool fibres. In all three samples a negative correlation occurred between the size of a fibre and the number, size, and distance of the fibres adjacent to it. The analysis demonstrated that the maximum distance over

which the correlation occurred was 173μ for the Ryeland, 283μ for the Lincoln, and 147μ for the Merino. It is suggested that the basis of the correlation is the occurrence of competition between skin follicles for the material from which they synthesize their fibres.

PINO, N. (1951). Ricerche sulla dentizione fetale in "Lepus cuniculus". **[Foetal dentition in the rabbit.]**—*Zootec. Vet., Milano.* **6,** 510-520. [Abst. from English summary.] **1019**

Histological observation of odontogenesis in the rabbit suggests that there is no precursor eruption of the incisor teeth. Dentine crusts, which later detach, are recorded as being present on the convex surface of the tooth edge immediately before eruption. The article is illustrated with photomicrographs.—C. W. OTTAWAY.

SCHMIDT-NIELSEN, K. & SCHMIDT-NIELSEN, B. (1952). **Water metabolism of desert mammals.**—*Physiol. Rev.* **32,** 135-166. **1020**

This review is an analysis of the present state of knowledge concerning the physiological problems which face small and large mammals living in deserts. Some details are given of the various adaptations to be found in the smaller ones—of how they escape the extreme heat by retiring to their burrows, and of their power to conserve the water of metabolic oxidation—but it is emphasized that little is known of the larger ones, which obviously cannot escape the heat by burrowing, and must therefore lose a considerable quantity of water in sweat.

The authors raise the question whether the camel may develop a tolerance for body temperatures well above its normal and so economize a part at least of the water loss by sweating, and he appeals for further research in this field.

—A.S.

PLUM, C. M. & HEDLUND, S. (1952). **Some investigations on the importance of the oxygen tension to the diameter of the blood corpuscles, with special reference to the change occurring in partial ligation of the vena cava inferior in rats.**—*Acta med. scand.* Suppl. No. 266. pp. 839-849. [In English.] **1021**

In rats in which the inferior vena cava had been partially ligated to produce stasis, there was an increase in the mean diam. of the polychromatic normoblasts in the femoral bone marrow, reaching a maximum after the first week and slowly decreasing up to one month after ligation. Simultaneously the arterial oxygen content decreased. No such changes were demonstrable in the marrow of the humerus. The authors consider that the decrease of stasis and the return to normal of the arterial oxygen content are due to the development of collateral vessels which relieve the area and allow erythropoiesis to return to normal. The techniques used were described.—F.E.W.

MCCLURE, T. J. (1952). **Correlation study of bovine erythrocyte antigen A and butterfat test.** [Correspondence.]—*Nature, Lond.* **170,** 327. **1022**

The frequency of occurrence of blood group antigen A in bovine r.b.c. is greater in Jersey than in Friesian cattle, suggesting that this antigen is associated with high milk butterfat content. A study of 95 blood samples from 9 herds of pedigree Friesian cattle in New Zealand showed that within this breed there appeared to be no direct correlation between the presence of antigen A and the butterfat content of the milk.

—A. B. PATERSON.

CLARK, R. & WEISS, K. E. (1952). **Reflex salivation in sheep and goats initiated by mechanical stimulation of the cardiac area of the fore stomachs.**—*J. S. Afr. vet. med. Ass.* **23,** 163-165. [Authors' summary modified.] **1023**

A salivary reflex has been demonstrated in sheep and goats which is initiated by mechanical irritation of the cardiac region of the fore stomachs. The afferent fibres lie in the vagus nerves.

SIMONNET, H., LE BARS, H. & CHAPEVILLE, F. (1952). Action d'extraits végétaux sur la motricité *in vitro* du duodénum de quelques mammifères. **[Action of certain vegetable extracts on the motility *in vitro* of the duodenum of some domestic animals.]**—*Rev. Path. comp.* **52,** 303-308. **1024**

Tyrode solution extracts of lucerne, vetch, clover, beetroot, etc., were used *in vitro* on lengths of duodenum from horses, rabbits, pigs and cattle. While the duodenum of the horse usually responded by an increase in tone or by a contraction, those of the pig and rabbit were generally inhibited—corresponding to the effects of adrenalin. Cattle duodenum in normal Tyrode solution is too weakly active for any useful comparisons.—B. C. CLARKE.

BORTOLAMI, R. & CALLEGARI, E. (1952). Osservazioni sullo sviluppo e sulla struttura della muscolatura dei villi intestinali in feti di Bos taurus. **[Development and structure of the muscular elements of the intestinal villi in the bovine foetus.]**—*Nuova Vet.* **28,** 154-159, 193-197 & 224-229. **1025**

The authors studied the structure and development of the double muscular layer in the

intestinal villi of the terminal duodenal tract of bovine foetuses. This double layer is probably of great importance in assisting the natural alternate repletion-depletion process in the intestinal villus.—I. MARTINI.

LEWANDOWSKI, M. (1952). Oliwa dolna — *nucleus olivarius inferior*—świni. **[The olivary body in pigs.]**—*Ann. Univ. M. Curie-Skłodowska.* Sect. DD. **6,** 293-307. [In Polish. German and Russian summaries.] **1026**

Careful measurement of cross-sections showed the feeble development of the main olivary body of the pig as compared with its dorsal and medial accessories. L. associated this feeble development of the main body with the very simple movements of the limbs, and quoted the similar development in cattle, the movements of which are comparable. This is contrasted with the greater development of the main olivary body in animals exhibiting more complex anatomical and functional development of the limbs and digits.—J. R. MITCHELL.

LUTNICKI, W. (1952). Badania nad nerwem przeponowym u świni. **[Investigations on the phrenic nerve in the pig.]**—*Ann. Univ. M. Curie-Skłodowska.* Sect. DD. **6,** 125-153. [In Polish. English and Russian summaries.] **1027**

In the carcasses of 33 pigs of various ages the phrenic nerve had originated in 4 different ways: (a) in 19 from the fourth, fifth, sixth and seventh cervical nerves, (b) in 9 from the fifth, sixth and seventh cervical nerves, (c) in 3 from the fourth, fifth and sixth cervical nerves, (d) in one from the fifth and sixth cervical nerves. The course of the nerve and its size (thickness) varied slightly. The function of the phrenic nerve in providing nervous supply to the diaphragm was not always symmetrical—in two of the animals the left nerve had a fourth branch.

—J. R. MITCHELL.

GOMPPER, H. J. (1950). Das Sekret des Eileiters. **[The secretion of the fallopian tubes.]**—*Anat. Anz.* **97,** 391-406. **1028**

The secretion into the uterine tube is mucous in character; this article is an analysis of its true nature and origin.—C. W. OTTAWAY.

ANON. (1952). **The suprarenal cortex. Colston Research Society symposium.**—*Lancet.* **262,** 814-816. **1029**

An account of the purification, use and assay of A.C.T.H. and of its effects and of those of the steroid hormones, with references to lactation, alkali metal metabolism and blood disorders.—R. MARSHALL.

See also absts. **1041** (luteinizing hormone and superovulation in cattle); **1043** (fertilization in ewes); **1071-1073** (heat adaptation); **1108** (book, chemistry and physiology of antibodies).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

DAVIS, J. G. (1952). **The chemical composition of milk between 1900 and 1950.**—*Analyst.* **77,** 499-521. Discussion pp. 522-524. [Abst. from author's summary.] **1030**

It has been suggested that the chemical quality of milk in Great Britain has deteriorated over the last 20 or 30 years. D. discussed the difficulties encountered in an attempt to study this question. There is insufficient information to allow any dogmatic assertion about the trends in milk quality. D. tabulated and examined the results of over half-a-million samples tested in various parts of England during the period 1900 to 1950. It appears that there has been a slight rise in fat content, with a peak at 1926–30, and subsequently a slight fall. The solids-not-fat values appear to have risen steadily from 1900 to 1921–25 and since then to have fallen appreciably. There is evidence that there has been a similar fall in the quality of milk in Wales, whereas the fat content of milk in Scotland has increased.

He discussed methods for maintaining or improving the quality of milk, and suggested that the logical solution is a universal method of payment by quality, and that the total solids content is the most suitable criterion from chemical aspects and also from the points of view of justice, simplicity, and methods of utilisation. The evidence available from other countries suggests that where milk is bought on a quality basis, the fat and solids-not-fat contents are at least maintained, if not improved, and that where payment is independent of quality, the chemical composition tends to deteriorate.

GERRARD, F. (1951). **Meat technology. A practical textbook for student and butcher.** pp. 309. London: Leonard Hill, Ltd. 2nd Edit. 15s. **1031**

This book is primarily intended for students in the meat trade to give them an outline of the scientific principles on which their craft is based, but it will be equally valuable for the professional man connected with the industry as giving him an idea of the practical application of his

craft. A brief survey of the evolution of each of our present breeds of meat animals is followed by a concise summary of their anatomy, each part being given its scientific and trade name; thus providing a most useful dictionary for both parties. Details of methods of slaughter and the dressing and preservation of carcasses and viscera are given, together with useful tables of weights, percentages of edible to inedible matter, disposal of by-products and the like. The author has coupled the result of his studies with a vast practical experience. This second edition contains some useful information on the calories per lb. of meat and on the ossification of bone, as well as a handy summary of the livestock census of the U.K. for 1949. The book is strongly recommended to veterinarians connected with the meat industry.—R. MACGREGOR.

BYWATER, H. E. (1952). **The hygienic preparation of meat carcases.**—*J. R. sanit. Inst.* 72, 375-381. Discussion pp. 381-387. [Author's summary slightly modified.] **1032**

Improvements in standards of hygiene which have been evolved in most fields of the food industry in recent years in Britain are notably absent in the preparation of carcasses for human food. Indeed, methods have tended to deteriorate and gross soiling of meat occurs far too frequently. Abattoirs are inadequate in design, capacity and equipment. There is a lack of appreciation of the principles of hygiene, both by management and by slaughtering personnel. Slaughtermen should be required to attend courses of instruction in hygiene as applied to the meat industry. Until a rational system of slaughtering procedure based on hygienic principles can be established, minor improvements should be introduced. High pressure sprays for washing down carcasses should be installed as a matter of urgency and meanwhile chemical agents should be used to sterilize wiping cloths and washing water, the bacterial content of which may be compared with that of sewage.

See also abstr. **956** and **957** (helminth ova in sewage); **1092** (report, New Zealand).

LIVESTOCK HYGIENE

RODENWALDT, E. & BADER, R.-E. (1951). Lehrbuch der Hygiene. [**Textbook of hygiene.**] pp. ix + 823. Berlin: Springer-Verlag. DM 68.70. **1033**

The subject matter of this textbook of hygiene for medical students is divided into two main parts—general hygiene and epidemiology and control of infectious diseases. The first deals with hygiene in relation to climate and weather, housing, water supply, general nutrition, effluent waters and sewage, burial, clothing, daily life and work. The second deals with diseases caused by bacteria and fungi, protozoa, viruses, helminths, arthropods, methods of disinfection, public health services and medical statistics. There are 102 illustrations and the book is well indexed.—E.G.

TRUTER, G. J. & LOUW, J. G. (1952). **Defluorination of aqueous solutions of superphosphate for use in animal nutrition.**—*Onderstepoort J. vet. Res.* 25, No. 3. pp. 93-97. [Abst. from authors' summary.] **1034**

The method consisted of the preparation of a concentrated solution of superphosphate, sedimentation of the insoluble fraction, boiling of the clear supernatant, and suitable dilution of the new supernatant in the drinking water.

ANON. (1951). **Management and conservation of vegetation in Africa. A Symposium.**—*Bull. Com. Bur. Past. Field Crops.* No. 41. pp. 3-97. Penglais, Aberystwyth. The Bureau. 10s. 6d. **1035**

This useful summary of information on the vegetation of Africa ought to be studied closely by all veterinary and agricultural officers on first appointment to posts in Africa and should be kept handy during their service careers. During the past twenty years much has been learned of the causes and means of prevention of the great evils that can follow misuse of land. In some areas it would appear that the climate is becoming more dry and little can be done to prevent the advance of the desert. This is, however, no reason why such steps as can should not be taken to slow the process and in a great many parts, measures can be introduced to prevent deterioration of the land and to improve pastures.

Veterinary Departments have been blamed in the past for preventing mortality from rinderpest and other important diseases for, by fulfilling this natural function, they have allowed the cattle to increase in numbers. The advantages of providing increased amounts of animal protein for peoples where diet is often notoriously deficient in such necessary foods are now obvious and, as the human population increases and the demand for meat and milk rises, pastures must be improved and more suitable types of animal must be introduced. Methods by which the

former object can be attained are one of the important subjects covered by this book.

The proper conservation of soil and water is the basis of agriculture and although in many parts of Africa the broad facts are known, difficulty is often found in persuading the inhabitants to adopt methods of good husbandry. Great progress has been made in some localities and a study of this book will enable the newcomer to appreciate the situation and use his influence in favour of better farming.

The book contains seven articles by experts in their own territories and covers the Union of South Africa, East Africa, Nigeria, Sierra Leone, the Gold Coast, Tanganyika Territory and the Sudan.—J. R. Hudson.

See also absts. **956** and **957** (sewage as ferilizer); **986** (Japanese animal hygiene statistics).

REPRODUCTION AND REPRODUCTIVE DISORDERS

Dorotte, J.-M., Fonteyreaud, G. & Barnet, G. (1952). Note sur l'insémination artificielle des juments, avec de la semence conservée 24 et 48 heures. Premiers résultats. [**Artificial insemination of mares with semen preserved for 24 and 48 hours.**]—*Rev. méd. vét., Lyon et Toulouse.* **103,** 424-429. **1036**

Semen of donkeys was collected in an artificial vagina, and diluted 1 : 3 or 1 : 4 in a diluent of glucose, gelatin and egg yolk. Mares were inseminated intracervically and by the intrauterine route every 48 hours during the heat period. The choice of route seemed immaterial. Six out of 12 mares conceived to inseminations of semen dilutions from 24–72 hours old.

—R. G. Mares.

Salisbury, G. W. & VanDemark, N. L. (1952). **Physiological basis for site of semen deposition and procedure in artificial insemination of cattle.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **3,** 99-106. [In English. French and German summaries. Authors' summary modified.] **1037**

Experiments have shown that no benefit in fertility results from insemination of cattle deeper than the midpoint of the cervix. When pregnant cows were inseminated in the cervix, pregnancy continued uninterrupted; but on insemination in the uterus, pregnancy was interrupted in all cases where antibiotics had not been used in the diluent, and in two out of six cases where antibiotics had been used.

Live or dead spermatozoa ascend the reproductive tract of the oestrous or post-oestrous cow in less than 2·5 to 4·0 min. The stimuli of both natural and artificial insemination cause the release of oxytocin. In turn, oxytocin causes uterine motility which results in the rapid transport of spermatozoa.

Stewart, D. L. (1952). **The comparative efficiency of the intracervical and intrauterine methods of insemination in the dairy cow.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **3,** 107-110. [In English. French and German summaries. Abst. from author's summary.] **1038**

In an investigation on the comparative efficiency of the intra-cervical and intra-uterine deposition of semen in the artificial insemination of dairy cattle, using the rectovaginal technique, the results obtained from 8,833 first inseminations made by 12 inseminators disclosed no significant difference in conception rate. When five normal pregnant cows were inseminated into the uterus pregnancy was interrupted in every case, but when the intra-cervical method was used on ten similar cows, eight remained pregnant.

S. discussed the merits of the two sites and concluded that the intra-cervical site is preferable.

Shannon, F. P., Salisbury, G. W. & Van Demark, N. L. (1952). **The fertility of cows inseminated at various intervals after calving.**—*J. Anim. Sci.* **11,** 355-360. **1039**

A study was made of the fertility levels of 7,071 cows first inseminated at varying intervals after calving. An optimal conception rate of 76·0%, following not more than two inseminations, was observed in 1,062 cows first inseminated 51–60 days *post partum.*

—C. C. Bannatyne.

Olds, D., Troutman, E. C. & Seath, D. M. (1952). **The effect of age and size on the fertility of dairy heifers.**—*J. Dairy Sci.* **35,** 620-622. [Authors' summary slightly modified.] **1040**

Fertility data were obtained for 2,166 heifers of the Holstein, Jersey and Guernsey breeds; ages were secured for 1,786 animals and the chest girth measurement for 1,405 of the heifers. Age groups studied ranged from 12 to 14 months to 24 months or over. There were no significant differences in breeding efficiency between the various age groups nor in heifers grouped according to size on the basis of chest girth measurements. The estimated weight groups ranged from 301 to 400 lb. to 901 to 1,000 lb.

LAMMING, G. E. & ROWSON, L. E. A. (1952). **Superovulation and ovum transplantation in cattle.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 144-153. [In English. French and German summaries. Abst. from authors' summary.] **1041**

The authors reviewed recent work on superovulation and ovum transplantation in cattle. They discussed conditions affecting the response of cows to pregnant mare's serum (P.M.S.). The presence of a corpus luteum in the ovary, or the injection of progesterone, at the time when P.M.S. is given will result in the production of ova which are not fertilized after A.I. In the presence of a corpus luteum, the ova produced by i/v inj. of luteinizing hormone travel down the fallopian tubes at a greatly increased rate.

The authors reviewed experiments designed to investigate methods of ovum transplantation not involving laparotomy, which could be used in a commercial scheme operated by laymen. It was noticed that the uterus is more susceptible to infection when a corpus luteum is present in the ovary, and this may necessitate aseptic techniques. Methods of transplanting ova aseptically *via* the cervix have failed. It is felt that the special methods necessary to maintain complete asepsis may limit the practical application of ovum transplantation in cattle.

WILLETT, E. L., MCSHAN, W. H. & MEYER, R. K. (1952). **Relation of stage of cycle and source of luteinizing hormone to superovulation in dairy cattle.**—*Proc. Soc. exp. Biol., N.Y.* **79,** 396-400. [Abst. from authors' summary.] **1042**

The authors reported two series of studies involving a total of 26 heifers and cows.

Five heifers superovulated during the luteal phase of the oestrus cycle produced 34 ova, none of which were fertilized. Five heifers treated during the follicular phase produced 43 ova, in 74% of which cleavage had taken place. All 6 heifers treated during the luteal phase, but none of the 6 treated during the follicular phase, had pyometra.

Thirty and 40 g. equivalents of sheep follicle stimulating hormone (FSH) gave responses about equal but considerably greater than a 20 g. dose.

Unfractionated sheep pituitary gonadotrophin produced approximately twice as many corpora lutea as human chorionic gonadotrophin (HCG) in the i/v inj. when they were used in combination with either sheep pituitary FSH or pregnant mare's serum (PMS).

A combination of PMS and HCG may produce satisfactory superovulation and should be studied further.

DAUZIER, L. & WINTENBERGER, S. (1952). Analyse des conditions de la fécondation chez la brebis. **[Fertilization in the ewe.]**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 113-124. [In French. English and German summaries. Abst. from authors' summary.] **1043**

The authors investigated the time taken by the spermatozoa to move from the vagina to the end of the fallopian tube nearest the ovary and the period for which they can remain fertile in the female genital tract.

Spermatozoa ejaculated in the vagina during oestrus will have reached the middle of the cervical canal in 15 min. and have passed through this canal in 30 min. Two hours after insemination they will have reached the tips of the uterine horn. Advance through the tubes is slower, and the spermatozoa will reach the ampulla eight hours after insemination.

In ewes served in anoestrus the spermatozoa never moved through the uterus, and in two cases out of five they did not pass the cervix.

The authors stated that the spermatozoa remain fertile in the female genital tract for 30 hours.

HENDRIKSE, J. & JOLING, K. F. (1952). **The influence on conception of the addition of penicillin and streptomycin to the diluted semen.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **3,** 117-125. [In English. French and German summaries. Authors' summary modified.] **1044**

From this investigation it appeared that the conception rate for semen with the addition of penicillin and streptomycin is not higher than for semen to which these antibiotics have not been added. Only in the case of one bull with low fertility was the conception rate increased by the addition of penicillin and streptomycin to the diluted semen. This could not, however, be observed with other similar bulls.

LAPLAUD, M., BRUNEEL, R. & GALLAND, H. (1950). Périodicité de la sécrétion visqueuse du sperme par le cheval et le baudet. **[Periodic viscous semen secretion in horses and donkeys.]**—*C. R. Acad. Sci., Paris.* **230,** 2049-2051. **1045**

Examination of semen collected by artificial vagina from three horse and two donkey stallions throughout the sexually "quiescent" period following the breeding season, *i.e.*, from mid-August until the 3rd week in March, revealed that the viscous portion was absent during the

whole period. The authors discussed the significance of this finding. They consider it possible that the activity of the accessory sex glands, which produce the viscous portion of the semen, is dissociated from that of the testicles in equine species, since libido and ability to serve persist during the "quiescent" period.—F.E.W.

HANCOCK, J. L. (1952). **The morphology of bull spermatozoa.**—*J. exp. Biol.* **29,** 445-453. [Abst. from author's summary.] **1046**

The cytoplasmic cap of the living cell possesses a characteristic structure which is identical with that which has been ascribed to the acrosome. The altered structure of the cap of the dead spermatozoon is identical with that previously described as characteristic of a second cap-like structure, the galea capitis. H. concluded that the terms galea capitis and acrosome have been used to describe the same structure. He suggested that the cytoplasmic cap of the bull spermatozoon should be called the acrosome. There are three plates of photomicrographs.

GRIGG, G. W. (1952). **Factors affecting the motility of fowl spermatozoa.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 87-96. [In English, French and German summaries. Abst. from author's summary.] **1047**

The motility of ejaculated fowl spermatozoa varies with the age of the semen, the presence of oxygen or of some utilizable substrate for anaerobic metabolism such as fructose or glucose, the pH of the medium, the tonicity of the suspending fluid, the dilution rate, the temperature of the medium and the interaction of dilution and temperature when the spermatozoa are maintained in anaerobic conditions. Each of these factors can cause immotility of fowl spermatozoa. When immotility is due to excessive age of the semen, the low pH of the suspending medium, a high dilution rate or excessive temperatures, it is irreversible, but the other factors listed above have a reversible effect on the motility of the spermatozoa.

G. discussed the relation of these observations to the use of motility as a measure of the fertilizing ability of fowl semen and suggested that variations in some of the factors may explain conflicting results obtained in the past.

RASMUSSEN, E. W. (1952). **The relation between strength of sexual drive and fertility as evident from experimental investigations.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **1,** 188-192. [In English. French and German summaries, Author's summary modified.] **1048**

The strength of the sexual drive was measured in albino rats of both sexes. In five generations, in which a total of 356 animals were tested, it was shown that the strength of the sex drive is genetically determined.

During the investigation a statistically significant difference in fertility between the two groups became evident. Couples of rats with high sex drive had a low fertility—while couples with weak sex drive produced a large number of offspring. The difference was due to the number of pairs which produced no offspring, as well as to the number of offspring per litter.

In further experiments with other species, 9 cocks with high drive, allowed to copulate *ad libitum,* fertilized 75 eggs—while 9 cocks with low drive fertilized 146 eggs. Owing to possible sources of error and high variability, these experiments with cocks cannot be regarded as conclusive.

BHADURI, J. L. (1951). **The role of Salientia in human and mammalian pregnancy tests.**—*Proc. 38th Indian Sci. Congr. Pt. II.* pp. 171-202. **1049**

In this presidential address to the Zoology and Entomology Section of the 38th Session of the Indian Science Congress, B. reviewed the work on the early diagnosis of mammalian pregnancy using frogs and toads, giving a list of the species that have been used, together with references. He reported the results he had obtained in the diagnosis of pregnancy in farm animals by a modified method using extracts of faeces and the male toad *Bufo melanostictus,* a positive reaction being determined by the emission of spermatozoa by the treated toad. He stated that he had obtained successful results with cows, buffaloes, g. pigs, sheep and deer. [But see next abst.]—S. S. PRABHU.

RAO, N. S. K. & KRISHNAMURTHY, H. V. (1952). **Note on Bhaduri's test for pregnancy in farm animals.** [Correspondence.]—*Curr. Sci.* **21,** 196-197. **1050**

COWIE noted in his review of pregnancy tests [*V.B.* **21,** 3738] that further confirmation of the reaction described by Bhaduri was needed.

In tests of this reaction made at the Mysore serum Inst., Hebbal, Bangalore, using local *Bufo melanostictus,* the authors obtained positive reactions from 17 of 18 pregnant cows, 19 of 20 non-pregnant lactating cows with calves 2–3 months old, 3 of 4 sterile cows, 12 of 16 bullocks, 8 of 10 female buffaloes and 5 of 8

male buffaloes. In parallel tests using (a) local *B. melanostictus* and (b) the same species from Calcutta, a pregnant cow and a lactating cow with a calf 2 months old both failed to give positive reactions in the latter (b); a sterile cow gave positive reactions in both (a) and (b) as did also two bullocks.

It was suggested that substances similar in effect to gonadotrophic hormones are present in the faeces of pregnant, non-pregnant and male cattle and that their origin should be investigated.—F.E.W.

EDGAR, D. G. (1952). **Progesterone in body fluids and tissues.**—*Rep. IInd Int. Congr. Physiol. Reprod., Copenhagen,* 1952. **1,** 168-172. [In English. French and German summaries. Author's summary modified.] **1051**

Using a physicochemical method for the determination of progesterone, this hormone was found in blood from the ovarian vein draining an active ovary in the pregnant and non-pregnant ewe and in the non-pregnant sow. It was not found in blood from the ovarian vein of one ewe with inactive ovaries, nor in the peripheral blood of the pregnant and non-pregnant ewe, mare, cow and sow.

It was present in fluid from the mature Graafian follicle of the cow and sow, and in fluid from ovarian cysts in the sow.

The progesterone content of corpora lutea from three species was also determined.

The author discussed these findings, and suggested other possible uses of the technique.

CANDINAS, L. (1951). Eine hormonale Methode zur Ausschaltung des Geschlechtstriebes und Erhöhung der Mastleistung beim weiblichen Schwein. **[Use of sex hormones for the suppression of oestrus and for the fattening of female pigs.]**—*Inaug. Diss., Zürich.* pp. 59. **1052**

Experiments showed that a castration effect could be produced in young female pigs by means of oestrogen injections, the rate of fattening and the quality of the flesh being thereby improved. Injection of 20–30 mg. of diethyldioxystilbene dipropionate or other oestrogen caused cystic degeneration of the ovaries and prevented the appearance of oestrus in young sows.—J. A. NICHOLSON.

RAKO, A., SOKOLA, D., BAČIĆ, V. & FINDRIK, M. (1952). Über die hormonale Kastration und Mastleistung bei weiblichen Schweinen. **[Hormonal suppression of oestrus for fattening sows.]**—*Schweiz. Arch. Tierheilk.* **94,** 658-670. [English, French and Italian summaries.] **1053**

The experiments of these Yugoslav authors were repetitive and gave similar results to those of others. [Spörri and Candinas *V.B.* **23,** 755]. Histology of the genital tract and thyroid gland was described and illustrated.—ROY MACK.

MURRAY, G. H. & EDEN, E. L., JR. (1952). **Progesterone to delay estrum in bitches.**—*Vet. Med.* **47,** 467-468. [Abst. from authors' summary.] **1054**

The clinical use of a preparation of progesterone to delay oestrus in bitches was described. When injected intramuscularly, it formed a type of implant producing the desired delaying effect for a protracted period without evidence of toxicity. A dose of 1–1·5 mg./lb. body wt. repeated at intervals of 2–3 weeks was recommended.

JURAND, A. (1952). Action antigonadale de *Lithospermum officinale* L. **[Antigonadal action of *Lithospermum officinale*.]**—*C. R. Soc. Biol., Paris.* **146,** 1034-1036. **1055**

Previous work in America [Plunkett, E. R. *et al.* (1950). *Proc. Soc. exp. Biol. Med.* **73,** 311] had shown that extracts of *L. ruderale* suppressed oestrus in rats when administered by the mouth. A Polish species, *L. officinale,* has been studied on male and female rats and white mice and has been found to depress the activity of both the ovary and the testicle.—M.C.

WIESNER, B. P. & YUDKIN, J. (1952). **Inhibition of oestrus by cultivated gromwell.**—*Nature, Lond.* **170,** 274-275. **1056**

Previous work had shown that *Lithospermum ruderale* extracts inhibit oestrus in mice. The authors tested *L. officinale* for similar properties. They fed a re-extracted freeze-dried extract by stomach tube to mature female mice with a high oestrous activity. The equivalent of 1 g. of ground dried herb inhibited oestrus, and 0.5 g. would sometimes maintain inhibition if fed daily. Oestrous rhythm returned to normal three days after treatment ceased. As no toxic effects were noted single daily doses of 10 g. dry herb equivalent were given to three human adults with no ill effects.—R. G. MARES.

HANCOCK, J. L. (1952). **The spermatozoa of sterile bulls.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **2,** 35-40. [In English. French and German summaries. Author's summary copied *verbatim.*] **1057**

Sterility in certain Friesian bulls is associated with a specific morphological abnormality affecting the acrosomes of their spermatozoa. This abnormality is visible in living spermatozoa and when precautions are taken during fixation to preserve the morphology of the living cell it

is also visible in killed and stained spermatozoa. If such precautions are not taken, and the spermatozoa are subsequently stained with nigrosin-eosin, or with Heidenhain's iron haematoxylin, or when such spermatozoa are examined with the phase-contrast microscope, the abnormality is inconspicuous.

These difficulties do not arise when Giemsa stain or Indian ink is used.

SCHOOP, G. & KLETTE, H. (1952). Gehäufte Sterilität durch oestrogene Stoffe im Weidegras. **[Sterility in cattle caused by an oestrogen-like substance in pasture grass.]**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **2,** 87-95. [In German. English and French summaries. Abst. from English summary.] **1058**

In an intensively run herd sterility on a large scale occurred in the summer of 1950. Cases of metritis were found with a slimy discharge of pus. These cases of metritis were not due to micro-organisms.

After the grazing of certain plots near the edge of a wood, young animals, pregnant or not, had considerable udder swellings. The same symptoms to a lesser degree, combined with a loss of milk, a rise in the cell content of milk, and reduced appetite occurred in cows during lactation.

From 3·5 kg. grass from the pasture concerned, three fractions of substances soluble in oil were isolated and the quantity in which they were found was determined. All fractions proved to have marked oestrogenic effects or to have a high oestrogen content which was stated to be in the proportion of 2 g./kg. dried grass substance.

SJOLLEMA, P. (1950). De z.g. enzoötische steriliteit bij het rund veroorzaakt door *Vibrio fetus*? **[Is so-called enzootic sterility in cattle caused by *Vibrio fetus*?]**—*Vlaam. Diergeneesk Tijdschr.* **19,** 73-84. [English, French and German summaries.] **1059**

A congress paper about the enzootic sterility that is being investigated in the Netherlands [*V.B.* **21,** 1644]. *V. fetus* is considered to be the cause; S. used the same arguments as those of Stegenga, but he failed to set up the infection in four heifers, using *V. fetus*. They all conceived (two to the first insemination, two to the second).—C. A. VAN DORSSEN.

HOSHI, S. (1952). Stérilité des juments. **[Sterility in mares.]**—*Bull. Off. int. Epiz.* May, **38,** pp. 448-466. [English summary.] **1060**

A general account of sterility in mares in Japan. Examination of the vaginal mucus is said to give a good indication as to the best time for service since it has a maximum viscosity on the day before ovulation. It is also claimed that a pregnancy diagnosis with an error of less than 10% can be made after the 16th day of pregnancy. Vaginitis, metritis and ovarian dysfunction are the common causes of sterility; habitual abortion is also common; this occurs particularly during the 5th to 7th month and can be successfully prevented by a course of chorionic gonadotrophin injections.

—J. A. NICHOLSON.

VUJOVIĆ, R. (1949). Sterilitet domaćih životinja. **[Sterility in domestic animals.]**—*Vet. Glasnik.* **3,** No. 3-4. pp. 9-22. **1061**

A general report with special emphasis on the nutritional and environmental factors affecting the reproductive functions of cattle and on the practical organization of veterinary work connected with the control of sterility in livestock.—I. MARTINI.

LAING, J. A. (1952). **Early embryonic mortality.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **2,** 17-34. [In English. French and German summaries. Author's summary copied *verbatim*.] **1062**

Early embryonic mortality has been known for many years to cause infertility. It occurs in cattle, pigs, rabbits and several other species. In cattle and pigs its incidence is very high and must be a cause of serious loss, but in all cases the aetiological factors are still obscure. It may perhaps be caused by abnormalities of the spermatozoa and ova acquired during maturation or after release from the testicle or ovary. Or it may be the result of abnormalities of uterine function. The primary factors responsible for such changes are as yet unknown, but maternal nutritional deficiency and the effects of iso-immunisation seem worth considering and it is as yet not possible to exclude as a cause infectious disease of the reproductive system. It is evident that no great advances in knowledge of the diseases responsible will come except through much closer study of animals affected by the natural disease.

CHANG, T. K. (1949). **Calcification in the fetuses of normal and Ancon sheep.**—*Anat. Rec.* **105,** 723-735. **1063**

C. concluded that in sheep, as in man, alkaline phosphatase does not seem to be causally related to chondrodystrophy.

—G. B. S. HEATH.

DE GROOT, TH. (1951). Over te dicht bij elkaar geplaatste spenen. Een erfelijk gebrek

bij het zwartbonte rund. [**A hereditary defect of the teat in Friesian cattle in Holland.**]—*Tijdschr. Diergeneesk.* **76,** 448-451. **1064**

Closely placed teats were seen in both cows and bulls. The author concluded from a pedigree study that this defect is hereditary.

—C. A. VAN DORSSEN.

FEDRIGO, G. (1952). Di una singolare complicanza in corso di taglio cesareo in bovine. [**A complication during caesarian section in a heifer.**]—*Nuova Vet.* **28,** 131-133. **1065**

Difficulty was experienced in reaching the uterus from an incision in the left flank.

—ROY MACK.

FRASER, A. (1952). **Some observations on post-parturient paralysis in cows.**—*Vet. Rec.* **64,** 400. **1066**

F. described, with case histories, the successful use of anti-histamine ("Anthisan") therapy in six cases of post-parturient paralysis in cows.—C. A. E. BRIGGS.

TARVER, W. J. (1952). **Trace elements and the post-parturient bovine. Some notes on observations and field research into retention of the placenta and acetonaemia.**—*Brit. Vet. J.* **108,** 256-260. [Abst. from author's summary.] **1067**

T. described two clinical types of retention of the placenta. He attempted to explain retention of the placenta and acetonaemia as caused by trace element imbalances and described some experiments which support this theory.

ABRAMS, J. T. (1952). **Livestock and their environments. (Part IV). The relationship of sunlight to bovine reproductive efficiency and productivity.**—*Brit. Vet. J.* **108,** 275-292. [For previous parts, see *V.B.* **22,** 3471.] **1068**

In this, the fourth of a series of articles on the effect of environment on the health of livestock, the author reviewed the literature dealing with the effect of light on mammalian reproduction and developed the hypothesis that the light may act in two different ways. The reproductive cycle may be directly affected by the period of exposure to visible light or lack of the ultra-violet fraction of sunlight may lead to reduced vitamin D formation. This may lead to impaired calcium and phosphorus metabolism and then infertility. The author suggested that extensive field trials should be undertaken to throw more light on the effect of vitamin D on fertility and production.—E. J. H. FORD.

DRIEUX, H. & THIÉRY, G. (1952). La placentation chez les mammifères domestiques. IV. Placenta des ovidés. [**Placentation in domestic animals. IV. Placenta of sheep.**]—*Rec. Méd. vét.* **128,** 5-18. **1069**

The authors briefly described the development and structure of the placenta and paraplacenta of the sheep and compared their gross and microscopic anatomy with those of other ruminants and with those of the carnivores.

—G. HALLEY.

See also absts. **805** (TB. of the testicle in bulls); **961** (cancer of the uterus); **1070** (atmospheric influence on chick embryo mortality); **1090** (report, Australia); **1100** (report, Leeward Islands).

ZOOTECHNY

THOMPSON, R. L. (1952). **Incubation at high altitudes. The effect of wind, barometric pressure and humidity on foetal mortality in the hen's egg.**—*Poult. Sci.* **31,** 497-509. **1070**

The problem of poor hatchability in incubators used above 6000 ft. was investigated and contrasted with the good results obtained with broody hens. Recommendations for more successful hatching at high altitudes were suggested and the late-peak mortality at low altitudes was discussed.—F. T. W. JORDAN.

ANON. (1952). Algunos problemas fisiopatologicos de climatologia zootecnica. [**Acclimatization of cattle in the tropics.**]—*Rev. Fac. Med. vet., Bogotà.* **20,** No. 104. pp. 40-58. **1071**

A general review describing the problems of acclimatization and the scientific approach best suited to solve them. The author suggested a close comparative study of resistant indigenous cattle and imported European stock, paying special attention to physiological qualities, resistance to parasitic attack, and the ability to make the best of low quality grazing. Such a study would give a firm idea of the qualities to be sought for or avoided and would be a good basis for breeding work.—A.S.

MAULE, J. P. (1952). **Experimental breeding of dairy cattle for hot climates.**—*Endeavour.* **11,** 41-46. **1072**

A general review of work on dairy cattle improvement in the tropics, both by development of indigenous cattle and cross-breeding zebu (*Bos indicus*) with European (*Bos taurus*) breeds, with most emphasis on the latter approach, experiments in the West Indies being mainly described. In Jamaica attention has been directed principally to Sahiwal-Jersey crosses,

while in Trinidad Holstein-Friesians have been cross-bred with mixed zebu stock. The Jersey crosses have shown less loss of constitution and greater milking potentiality than those of the Holsteins. Experiments with Red Sindhi-Jersey crosses at Allahabad and Beltsville were mentioned. M. considers that this cross may give the basis for a new heat-tolerant dairy breed.

[It is regretted that this article does not give more attention to work on improving the dairying qualities of indigenous cattle in the tropics and also fails to stress the numerous difficulties inseparable from cross-breeding programmes.]—T. Leach.

Badreldin, A. L. & Ghany, M. A. (1952). **Adaptive mechanisms of buffaloes to ambient temperature.** [Correspondence.] — *Nature, Lond.* **170,** 457-458. **1073**

Six non-pregnant buffalo cows eight years old were subjected to shade conditions and direct sunlight alternately, and recordings made of respirations, pulse rates and body temperatures. The respiration rate rose more rapidly than the body temperature, and also fell more rapidly on return to shade. The pulse rate was the last to be affected. Thus the respiratory tract is the first mechanism for heat elimination, the pulse increasing only when respirations alone cannot cope with the task. Although the buffalo is a native of tropical climates it is a shade loving animal, and in the shade its dark skin is an aid in heat dissipation: in the sun however it is a disadvantage as it absorbs infra-red rays. Other adaptive mechanisms are the thickness of the skin and the shedding of hair.—R. G. Mares.

Ramirez Opazo, J. (1952). Hipometría en F. S. de carreras. [**Measurements of horses and differences between "stayers" and "sprinters".**]—*Rev. Med. vet., Santiago.* **1,** No. 4. pp. 5-11. **1074**

Measurement showed that "stayers", in addition to being heavier in build, tended to have a more pronounced development of the fore part of the body, so that from above the general shape was that of an isosceles triangle with its base at the shoulders of the animal.

—A.S.

Kment, A. & Willinger, H. (1951). Versuche zur hormonalen Kastration männlicher Schweine. [**Hormonal castration of boars.**]—*Wien. tierärztl. Mschr.* **38,** 773-785. [English, French and Italian summaries.] **1075**

14 boars of various ages and weights were injected twice at an average interval of 6 weeks with 5–20 ml. dioxy-diethyl-stilbene in a 1% oily solution and 25–75 mg. in suspension. After treatment their temperament altered and libido decreased gradually. The meat and fat of treated boars slaughtered some weeks after the last injection had lost the typical sexual odour. This method might also be useful for the castration of cryptorchid boars.—H. Behrens.

Paredes, J. R. (1952). Tipos de oreja y su herencia, en la cabra. (Comunicación previa). [**Variations in the ears of goats.**]—*Arch. Zootec., Cordoba.* **1,** 23-39. [English summary.] **1076**

The three types of external ear, normal, short and "earless", to be found in Spanish domestic goats were described, together with some experiments concerned with their inheritance.—A.S.

Warner, J. N. [The Allahabad Agricultural Institute, Allahabad (U.P.)]. (1951). **Dairying in India.** pp. xii + 380. Calcutta: Bombay: Madras: London: Macmillan & Co. Ltd. 25s. **1077**

The greater part of this book deals with dairy chemistry, bacteriology, engineering, pasteurization, butter, ghee and dahi making etc. These subjects are dealt with in considerable detail and will be of great value to Indian readers.

The part of the book which is devoted to such matters as cattle management, feeding, Indian dairy breeds and so on is much shorter and one wishes that it had been possible to deal with these more fundamental aspects of dairying in greater detail. The emphasis of the book is therefore on the technology of dairying rather than on the farming side.—M.C.

Phillips, R. (1952). **The sale of surplus calves in Great Britain, 1940-50.**—*J. Dairy Res.* **19,** 1-13. **1078**

The average annual calf sales in the 11-year period under review were one and a quarter million but there was a variation from the low level of 860,000 in 1940 to a peak of 1,450,000 in 1946. During the first years of the period the monthly sales had a peak in April and a lower peak in October, whilst in the latter years the October peak was the greatest. This change coincided with the change to winter milk production. The calves are broadly classified as bobbies and veals of 1st, 2nd or 3rd quality. The proportion of veals in the total is highest in the summer months when milk is cheapest. The proportion of veals decreased in the latter years, but the proportion of 3rd class veals to total veals increased, thus there has been a general deterioration of quality during the ten-year period. During the period there was a gradual increase in total cow population and a

steeper increase in estimated calf crop; calf sales increased until 1946, when the calf subsidy was introduced, after which calf sales fell and the cattle population under one year old rose. During the last eight years of the period the ratio of calf crop to total cows it is estimated has averaged 92%.—E. J. H. Ford.

Moule, G. R. (1952). **Vital statistics and the Queensland sheep industry. Parts I, II, III.** *Qd. agric. J.* **74,** 224-241, 288-308 & 343-363. **1079**

I, II & III. Vital statistics form the starting point for "operation research" in any animal industry. These papers were written to encourage wool-growers to keep their own records and to show them how to use such figures for improving production in their own flocks. Two aspects of the problem were discussed—(1) the influence of births and deaths on the amount of selection which can be practised, and (2) some of the effects of selection.

Standard methods of calculating lambing percentages and death rates were described, graphs being reproduced from which permissible culling levels can be read once lambing percentages and annual death rates are known. Figures for lambing percentages and annual losses were given for various districts in Queensland and their effect on flock composition analysed. The effect of culling in raising wool production in the present and future generations was briefly discussed. Emphasis was placed on the importance of ram selection.—H. Newton Turner.

TECHNIQUE AND APPARATUS

Desbordes, J., Fournier, E. & Guyotjeannin, C. (1952). Nouvelle application de l'usage des corps tensio-actifs en physiologie bactérienne. Coloration à froid des bacilles tuberculeux. **[Use of surface active agents in bacteriology. Staining, in the cold, of** *Mycobacterium tuberculosis.***]**—*Ann. Inst. Pasteur.* **83,** 268-270. **1080**

Surface-active substances, such as Tween, etc., if added to carbol fuchsin, allow the staining of acid-fast bacilli without heating.

—A. Mayr-Harting.

Finney, D. J. (1951). **The estimation of bacterial densities from dilution series.**—*J. Hyg., Camb.* **49,** 26-35. **1081**

F. applied a 'loglog' transformation devised by Mather (1949) for extinction time data in bioassay to give a new method of computing the maximum likelihood estimate of bacterial density from the evidence of a dilution series. Tables are provided to expedite the application of the method.—E. G. White.

Huhtanen, C. N., Rogers, M. R. & Gall, L. S. (1952). **Improved techniques for isolating and purifying rumen organisms.**—*J. Bact.* **64,** 17-23. [Abst. from authors' summary.] **1082**

A procedure was designed which created a suitable pH and Eh (oxidation-reduction potential) in both the dilution blanks and the broth, and controlled the production of acid by the more rapidly growing organisms. Culturability of rumen bacteria was increased, and the growth of several delicate anaerobes typical of the adult roughage-fed ruminant encouraged. An anaerobic plating technique for the purification of mixed cultures was described. Quantitative estimates of the bacteria present in a sample can be obtained using this method.

Godglück, G. (1952). Die Herstellung von Trypanosomenantigenen durch Einfrieren. Ein weiteres vereinfachtes Verfahren zur Vereinheitlichung der Extraktgewinnung für den praktischen Laboratoriumsgebrauch. **[Preparation of** *Trypanosoma equiperdum* **antigen by freezing.]**—*Mh. VetMed.* **7,** 320-322. **1083**

Centrifuged blood was frozen and the trypanosome layer separated from the erythrocyte layer by cutting. After thawing and washing a carbol saline antigen was produced.

—M. L. Clarke.

Boyd, J. S. K. (1952). **Bacteriophage-typing and epidemiological problems.**—*Brit. med. J.* Sept. 27th, 679-685. **1084**

A review of the present position in the bacteriophage typing of organisms of epidemiological importance to man.—A. H. Linton.

Hartzell, A., Haynes, H. L. & Connola, D. P. (1948). **Apparatus used in laboratory insecticide tests at Boyce Thompson Institute.** —*Contr. Boyce Thompson Inst.* **15,** 131-140. [Abst. from authors' summary.] **1085**

One apparatus consists of a series of cages in a culture room for rearing insects under controlled conditions of temperature, humidity, and light, and there is a testing laboratory containing a combined spray and dust hood with a motor driven turntable mounted in it. Special spray apparatus and "fly knockdown chambers" are also used.

See also abstr. **854** (taking preputial samples from bulls with trichomoniasis); **855** (culture diagnosis of trichomoniasis); **865** (Sabin-Feldman test); **877-879** (cultivation of F. & M. disease virus on bovine tongue epithelium, foetuses and mouse brain); **905** (cultivation of E.I.A. virus in chick embryos); **1036-1039** (A.I.); **1041** (transplantation of ovum in cattle); **1049-1050** (pregnancy diagnosis).

REPORTS

GREAT BRITAIN. (1951). **The Lister Institute of Preventive Medicine. Report of the governing body 1951.** pp. 14. London: The Institute. **1086**

Research of veterinary interest during the year included studies of the skin reactions of cattle sensitized with *Trichomonas foetus* antigen as affected by cortisone, sphingomyelin, A.C.T.H. and a synthetic antihistamine. Electrophoretic and serological examination of normal and immune bovine and rabbit sera; observations both *in vitro* and *in vivo* on the anaphylactic action of serum fractions prepared by salt fractionation. The preparation of specific precipitating antisera for identification tests on the blood meals of various blood sucking insects, so as to include a great variey of mammalian species.

Research into the biochemical factors involved in the action of clostridial toxins, which may determine their different virulence in different species of animals, has continued. Inhibition of *Cl. welchii* lecithinase by equine antitoxin has also received attention.

Changes in the maternal sera and embryonic fluid of rabbits, following injection of *Brucella* antisera prepared in rabbits and cattle, have been studied. Various routes of injection were employed to test the permeability of the different embryonic membranes.

Other research of interest in the comparative field concerned the effect on the antigenic properties of vaccinia virus of irradiation with ultra-violet light and a study of the relationship between the composition of media and capsule formation in Group A and C streptococci. The value of dextran of different molecular weight as a plasma substitute has also been investigated.

—T. LEACH.

GREAT BRITAIN. (1951). **Colonial development corporation. Annual report and statement of accounts for the year ended 31st December 1950.** pp. 63. London: H.M. Stationery Office. 2s. **1087**

Twenty-two new schemes were started in the year, making a total of 50 spread through 22 territories. Expenditure totalled £10,000,000 to the end of 1950 and the year's working showed a deficiency of £1,300,000.

Five undertakings are in the charge of the Animal Products Division and 15 are the responsibility of the two Agricultural Divisions.

Recent planning under the Animal Products Division includes investigations into cattle raising in North Borneo, pig production in Cyprus and the erection of an abattoir for sheep in the Somaliland Protectorate. This last project was abandoned, owing to the dangers of transmitting RINDERPEST in exported carcasses.

Operational undertakings administered by the Division include the construction of an abattoir at Lobatsi, Bechuanaland, capable of handling 55,000 cattle *per annum*. Slaughtering will commence in July, 1952. A cattle ranch is being established on the Chobe Crown Lands in Northern Bechuanaland. Full development will occupy 18 to 20 years and the total carrying capacity is estimated at 350,000 head.

Two interdependent stock farms are being established in British Honduras to supply local requirements. An abattoir and cold storage plant is being built in the Falkland Is. to slaughter and process sheep and cattle for export. Detailed consideration is given to the failure of the Gambia Poultry Farm, which has since been closed down.—T. LEACH.

ANON. (1952). **Veterinary Research Division. Advisory work.**—*Res. Exp. Rec. Min. Agric. N. Ireland.* 1951. pp. 101-108. **1088**

In poultry the main cause of mortality (9·5%) was 'management and dietetic errors'. 750,000 rapid tests for PULLORUM DISEASE were made. There was a considerable increase in specimens submitted from cattle but a reduced demand for *Br. abortus* vaccine. *Salmonella dublin* caused an outbreak of DYSENTERY in pigs.

Research included immunology, T.B. desensitization, bovine salmonella, incidence and spread of JOHNE'S DISEASE, and MASTITIS.

—S. E. FOX.

NORTHERN IRELAND. (1952). **Agricultural Research Institute of Northern Ireland, Hillsborough, Co. Down. Twenty-fifth annual report, 1951-52.** pp. 40. Hillsborough, Co. Down: The Institute. **1089**

Poultry breeding was successful and mortality amongst laying birds was low, but some cases of Lymphomatosis (FOWL PARALYSIS) and a few of OSTEOPETROSIS ("marble bone") were found. The feeding of chickens on an all-vegetable diet was tried out and tests were made on the effect of antibiotics on the growth of chickens.

Comparative experiments on the feeding of grass and crop silage to bullocks resulted in favour of the former.—D. S. RABAGLIATI.

AUSTRALIA. (1951). **Western Australia. Annual report of the Department of Agriculture for**

the year ended 30th June 1950. [CLARK, A. L. McK.] pp. 46. Perth: William H. Wyatt. [Items of veterinary interest — pp. 12-14.] **1090**

Testing of licenced dairy herds for TB. has continued: of 16,919 cattle in 350 herds, 3·2% gave positive reactions to the tuberculin test. Re-testing in the Metropolitan area revealed an incidence of 2·28% compared with 40·5% in 1948. The incidence of positive reactors in country herds was generally low (2% in 3,164 cattle in 79 herds). The voluntary scheme for the control of PULLORUM DISEASE continued to operate, the rapid whole blood test being employed. The use of Strain 19 vaccine throughout the dairying districts has minimized losses due to CONTAGIOUS ABORTION. FOOT ROT has been prevalent amongst sheep in the higher rainfall areas. Control by quarantine and eradication measures was attempted. A few outbreaks of BOTULISM in sheep and cattle occurred on properties where preventive inoculation has not been used.

Seasonal conditions were favourable for the occurrence of ENTEROTOXAEMIA but outbreaks were confined to unvaccinated sheep. Many deaths from TETANUS occurred in lambs following tailing and castration with rubber rings.

Of 1½ million sheep inspected for LICE AND KEDS 36,000 were found to be infested. The ITCH MITE (*Psorergates ovis*) is fairly widely distributed.

Controlled experiments, designed to investigate the possible relationship of PHOSPHORUS DEFICIENCY to infertility in cows, will be carried out at a new research station in the South West. The survey and mapping of COPPER AND COBALT DEFICIENT AREAS is proceeding. The seasonal variation in the copper status of sheep, and the copper-molybdenum ratio in pastures and sheep, are being studied. URINARY CALCULI cause serious losses of sheep in the eastern agricultural districts. The problem has been surveyed and is being investigated. It has been established that the common calculi are siliceous.

INFERTILITY OF SHEEP on subterranean clover pastures has ceased to be a problem of major economic importance. This change may be attributed to the application of control measures, and to seasonal conditions unfavourable to clover dominance. Investigations are being continued, particularly in regard to the isolation and chemical characterisation of the clover oestrogen.—H. W. BENNETTS.

AUSTRALIA. (1950). **Fourteenth annual report of the Australian Wool Board for the year ended 30th June 1950.** pp. 24. [Items of veterinary interest—pp. 19-24.] **1091**

Spraying with D.D.T. (1·0%) or B.H.C. (0·05% γ) provided useful protection against body strike by sheep blowfly and was much more effective than an insecticidal fog.

Linognathus pedalis was eradicated from a small flock by treatment in a foot bath charged with 0·007% γ B.H.C. *Psorergates ovis* (itch mite) was not eradicated by dipping in B.H.C., D.D.T., toxaphene, parathion or copper sulphate. Colloidal sulphur (1%) gave promising results.

Insecticidal fogs containing B.H.C. (2% γ) or D.D.T. (10%*p-p*) may eradicate *Damalinia ovis* in newly shorn sheep, but are ineffective in sheep with longer wool.

Phenothiazine was less effective against *Chabertia ovina* and *Oesophagostomum venulosum* than against *O. columbianum*.

The dose of phenothiazine usually prescribed was more effective against *Ostertagia* spp. and *Trichostrongylus axei* in the abomasum than against *Trichostrongylus* spp. in the duodenum. When the dose was doubled efficiency against the abomasal worms was not increased but efficiency against *Trichostrongylus* spp. in the duodenum was increased considerably.

In a field trial lead arsenate was very effective against *Moniezia* spp., but removal of the relatively light infestations was not followed by any increase in body weight.

Hexachlorethane produced toxic effects, including deaths, in sheep in a field trial. Other sheep in the trial were dosed with carbon tetrachloride without ill-effects. Sheep affected by hexachlorethane responded to treatment with calcium gluconate.

Further studies on the "self-cure" phenomenon [*V.B.* **21**, 2938] suggested that it may take place irrespective of the age of the existing infestation.

In experimentally infested sheep there was no increase in egg laying by *H. contortus* or *Trichostrongylus* spp. in the spring months.

In lambs *Dictyocaulus filaria* infestation reached a maximum within 3 months of birth but rapidly declined to low levels.

Large amounts of wheat were necessary to cause death in sheep on a high plane of nutrition but smaller amounts were fatal for sheep on a low plane.

In drought feeding trials the sheep fed once a week thrived as well as those fed daily and their survival rate was much higher.

—H. McL. GORDON.

NEW ZEALAND. (1952). **Twenty-Sixth annual report of the Department of Scientific and Industrial Research.** pp. 84. Wellington: R. E. Owen, Govt. Printer. 1s. 9d. **1092**

The report contains little of veterinary interest. In the Animal Ecology Section, observations on wild rabbits revealed a great mortality rate between conception and the birth of the young. Of 1,020 rabbits examined in Jan., 80% were under nine months old. However, appreciable natural mortality occurs on leaving the nest and again three months later.

In further work on the dehydration of meat in molten fat under reduced pressure, it was found that tenderness could be improved by freezing for a day before dehydration.

—D. S. RABAGLIATI.

PAKISTAN. (1949). **Sind. Scheme of the investigation of diseases in the Province of Sind. Summary of the Assistant Disease Investigation Officers annual report for the year from 1st April 1948 to 31st March 1949.** [SHAIKH, I. Y.] pp. 8. Karachi: Government Press. **1093**

This scheme for a survey and investigation of important diseases of poultry in Sind was commenced in October 1945.

Nine outbreaks of NEWCASTLE DISEASE were investigated. Mortality was 90–100% in chickens. Vaccine made at Peshawar, was used on 977 fowls and on exposure to infection mortality was 2–4%. Ducks were resistant to natural infection. In two outbreaks of FOWL POX investigated, mortality was low. COCCIDIOSIS caused mortality among chicks. There were outbreaks of SPIROCHAETOSIS involving 272 chickens and two ducks, the losses being 9·5%. The transmitting parasite is *Argas persicus*. A form of CONTAGIOUS CATARRH was observed. The use of sulphapyridine is said to have been "encouraging".

The use of benzene hexachloride on poultry and D.D.T. 5% solution for spraying pens was effective against *A. persicus*.—J. A. GRIFFITHS.

NORTHERN RHODESIA. (1952). **Department of Veterinary Services annual report for the year 1951.** [ELLIOT, G. F.] pp. 24. Lusaka: The Govt. Printer. 1s. **1094**

Twenty-six African assistants completed their training at the African Veterinary School and 23 fresh students were enrolled.

In the Research Section 3,041 smears were examined. In Jan. and Feb. 1951, there were several cases of so-called "POSTERIOR PARALYSIS" of equine and bovine animals. In addition to the syndrome known in cattle over many years in Northern Rhodesia, the horses this year showed incontinence of urine, which flowed irregularly as a viscous foetid yellowish fluid. After death despite temporary response to insulin in some cases and penicillin in others, the bladder was found to be empty of fluid but contained a greenish grey slimy deposit. Laboratory animals and an old horse inoculated with blood and urine from sick animals remained healthy. The disease appeared again after heavy rains. Subinoculations of blood, c.s.f., brain and cord suspensions, intracranially and i/p into mice and g. pigs produced no symptoms. The complete spinal cord and brain of a horse destroyed when moribund was removed for section and microscopic examination, but this had not yet been undertaken. It has been decided to investigate whether the condition is due to filarial larvae damaging the c.n.s.

Following on the successful use of a heat attenuated F. & M. DISEASE vaccine in indigenous cattle in 1950, further experiments were done to evaluate the vaccine for use in grade cattle which are more susceptible to the disease than indigenous cattle. Results were unsatisfactory in that it proved impossible to attenuate the vaccine to the point of safety in use and yet retain its antigenicity.

There are five appendices, mostly statistical.—D. S. RABAGLIATI.

SWAZILAND. (1952). **Annual report, Veterinary Department, for the year 1951.** [BARNARD, W. G.] pp. 23 + XVIII Appendixes. [Mimeographed.] **1095**

A Vet. Department separate from the Department of Agriculture was set up in 1950 and this is its second report. There is one ultimate aim, namely, to treat, control and eradicate diseases, which policy, however, cannot be divorced from good farming practices. So far it has not been possible to educate the farming peasants, but the scheme for cattle guard training has gone smoothly and promises to be a success.

The threat of invasion of F. & M. DISEASE caused considerable anxiety, but the danger was avoided despite outbreaks in the Transvaal and in Portuguese East Africa. Double fencing along these two borders provided a measure of security, but the presence of a large number of susceptible game animals caused anxiety.

EAST COAST FEVER, TRYPANOSOMIASIS, SHEEP SCAB, HEARTWATER, BABESIASIS and ANAPLASMOSIS were amongst the diseases dealt with, but losses from endemic disease have been small.

There is a progressive decline in the number of cattle; they have decreased by another 8,000

head;—600 less now being owned by the Swazi people. Other domestic species except sheep and goats have also decreased, especially breeding stock.

A section of the report deals with the various Colonial Development and Welfare Schemes. The 18 appendices give a statistical survey of the state of the animal industry.

—D. S. Rabagliati.

I. Basutoland. (1951). **Annual report of the Department of Agriculture for the year 1950.** pp. 25. [Report of Veterinary Officer, E. T. Fern, pp. 11-15.] **1096**

II. Basutoland. (1952). **Annual report of the Department of Agriculture for the year 1951.** pp. 33. [Report of Veterinary Officer, P. H. Brown, pp. 16-20.] **1097**

I. A very short veterinary section deals with the important diseases of animals found in Basutoland in 1950 and the methods used in their control.

II. A similar report to that for the year 1951. A training scheme for African Veterinary Assistants has been started in Basutoland.

—Charlotte M. Wood.

The Gambia Colony. (1951). **The Annual Report of the Veterinary Department for the year 1949.** [Fulton, A.] pp. 11. Bathurst: Govt. Printer. **1098**

During the year a serious Rinderpest epizootic occurred in West Africa; the Colony was invaded at several points in Feb. and outbreaks continued until Nov. Many affected herds had a 50–70% mortality. Control was exercised by vaccination with formolized spleen vaccine; later in the campaign alumina gel was added, with the intention of reducing the dosage and thus increasing numbers inoculated with the vaccine material available. However, this modified vaccine was found to be unsatisfactory and addition of alumina gel was discontinued. Subsequently, lapinized Rinderpest vaccine was used, after successful field trials. This vaccine gave good results and was economical to produce. Just over 44,000 head were inoculated by all three methods.

Some 24,000 cattle were inoculated against Bovine Contagious Pleuro-Pneumonia and no cases were reported during the year. A severe outbreak of Newcastle Disease decimated affected flocks. Control measures were confined to advising owners to segregate their flocks and disinfect premises and utensils. Training of staff had to be abandoned during the Rinderpest control campaign.—T. Leach.

Zanzibar Protectorate. (1952). **Annual report of the Department of Agriculture, 1950.** Alley, J. C. pp. 36. Zanzibar: The Govt. Printer. 2s. [Items of veterinary interest pp. 17-20.] **1099**

Steps taken to control the two most common important diseases for the area— Trypanosomiasis and East Coast Fever— and the results are described. Progress of the cattle industry is reported.—Charlotte M. Wood.

Leeward Islands. (1952). **Annual report of the Departments of Agriculture and Veterinary Services for the year 1950.** pp. 109. Antigua: E. M. Blackman, Govt. Printer. [Report of Chief Veterinary Officer, Leeward Islands Colony, Hutson, L. R. Pt. II. pp. 1-7; Report of Veterinary Department, St. Kitts, Nevis and Anguilla, Vaughan, A. W. Pt. V. pp. 1-8.] **1100**

The basic policy is to maintain the livestock industry as an integral part of a well balanced agricultural system. The Colony remained free from the majority of the serious infectious and contagious diseases. The situation regarding TB. is satisfactory so far as dairy herds are concerned. 361 cattle in three herds were tuberculin tested with only 0·5% of reactors. Infertility in cattle caused some concern and a visit has been arranged of an expert on this trouble from England. The presence of stomach worms (*Haemonchus contortus*) in sheep and goats continues to cause heavy losses and tick infestation is also a problem. It is proposed to erect either dipping or spraying facilities at selected Land Settlement Centres as a preventive measure.

—D. S. Rabagliati.

U.S.A. (1951). **Sixty-fourth annual report of the Director, Purdue University Agricultural Experiment Station, Lafayette, Indiana, for the year ending June 30, 1951.** [Reed, H. J.] pp. 147. [Items of veterinary interest pp.49-64 and 106-108.] **1101**

This is a synopsis of research work in Indiana on livestock along with a report on the routine laboratory diagnostic service.

Pigs have received the greatest attention, largely in connexion with feeding, such as a test on antibiotics and on amino-acids as diet supplements. Reports on "inbred" swine and infra-red lamps to save new-born piglets are included and the control of Swine Brucellosis, Swine Dysentery and Swine Gastro-Enteritis. Reports on cattle include experiments on maize silage, hormones, Brucellosis and nutrition of calves. The poultry research includes the position of sparrows in Newcastle

Disease and experiments on turkeys and quail.

The laboratory work covers disease in fowls, the neuropathology of Swine Fever, researches in Atrophic Rhinitis in pigs and losses following Swine Fever vaccinations.

Tests conducted for farmers comprised 161,686 cattle and 13,598 pigs for Brucellosis; 525 cattle for Mastitis, 172 fowls for Pullorum Disease, 1,073 birds for Newcastle Disease and 406 for other viruses.—D. S. Rabagliati.

BOOK REVIEWS

Wilson, G. S. [Director, Public Health Laboratory Service, Medical Research Council.], Blacklock, J. W. S. [Professor in Pathology, St. Bartholomew's Hospital Medical College, London.] & Reilly, L. V. [Bacteriologist to the Northern Ireland Tuberculosis Authority.] (1952). **Non-pulmonary tuberculosis of bovine origin in Great Britain and Northern Ireland.** pp. 108. London: The National Association for the Prevention of Tuberculosis. 16s. **1102**

This book is based on reports concerning non-pulmonary tuberculosis of bovine origin in England, Wales, Scotland and Northern Ireland. The reports for England, Wales and Northern Ireland have already been published separately.

The survey covers the years 1943–45 for England and Wales, 1943–44 for Scotland and 1945–50 for Northern Ireland. During these respective periods 994 strains of tubercle bacilli of non-pulmonary origin were examined in England, 112 in Wales and 1,051 in Scotland. The bovine type bacillus was isolated in 26·3% of cases in England, in 17·0% in Wales and in 21·7% of cases in Scotland. In Northern Ireland 387 strains were typed and of 237 strains from meningitis cases 3·4% were of bovine origin and of 142 strains from surgical cases 5·6% were of bovine type infection. Detailed analyses are given of the figures according to geographical distribution, age and sex of patient, site of the disease and contact history.

From calculations based on the survey figures it is estimated that in the year 1944 in Great Britain as a whole about 550 deaths from tuberculous meningitis and about 1,050 from other forms of non-pulmonary TB. were all due to bovine type infection, and it is claimed that the blame for these must be laid almost wholly on raw infected milk.

It is of interest that 30% of the bovine type infections occurred in persons of 15 years and over, indicating that the risks of drinking infected milk are not confined to children. In England and Scotland the max. proportion of bovine type infections occurred in the 5–9 year old group while in Wales the highest proportion was in the 0–4 year old group. In England 86·7% of the patients with bovine type TB. and 55% of those with human type infection gave a history of drinking raw milk. Comparable figures for Wales were 80 and 55·4% and for Scotland 80 and 46·5% respectively.

The figures for Northern Ireland are regarded as not being strictly comparable as they refer to a later period, show a high proportion of meningeal cases and a low incidence of bovine type intection. It is stated that there has been a marked decrease in TB. of bovine origin in Northern Ireland and that this decrease is due to the marked increase in the amount of milk pasteurized. In 1939 pasteurized milk represented about 7% of the total in Northern Ireland whereas in 1949 the amount of "safe" milk (pasteurized and Grade A) amounted to about 90% of the total milk sold.

—D. Luke.

Clifton, C. E., Raffel, S. & Barker, H. A. [Edited by.] (1952). **Annual review of microbiology. Vol. 6.** pp. ix + 492. Stanford, California: Annual Reviews, Inc. $6.00. **1103**

Volume six (1952) contains 21 reviews each with a list of references to literature, the following being of veterinary interest:— Metabolism of microorganisms, H. C. Lichstein; Nutrition of microorganisms, J. L. Stokes; Genetics of microorganisms, R. Kaplan; The coryneform bacteria, H. L. Jensen; Classification and nomenclature of viruses, C. H. Andrewes; The characterization of antibodies, E. L. Smith and B. V. Jager; Haemagglutination in relation to host cell-virus interaction, F. M. Burnet; Influence of age on susceptibility to virus infections with particular reference to laboratory animals, M. M. Sigel; Toxoplasma and toxoplasmosis, D. Weinman; Metabolism of spirochetes, Q. M. Geiman; Bacterial viruses, W. H. Price; The standardization of immunological substances, O. Maaløe and N. K. Jerne; Antibiotics, W. M. M. Kirby; The mode of action of chemotherapeutic agents, H. W. Julius; and Biological activities of metabolite analogues, W. Shive. There are good author and subject indexes.—E. Marsh Jones.

Ainsworth, G. C. [Department of Botany, University College of the South West of England, Exeter, Devon.] (1952). **Medical mycology. An introduction to its problems.**

pp. ix + 105. London: Sir Isaac Pitman & Sons, Ltd. 15s. **1104**

The author is a trained mycologist and, as Secretary of the Medical Mycology Committee of the Medical Research Council, is in a position to write with authority on the scientific aspects of the subject dealt with.

The book is divided into eight chapters dealing respectively with: (I) Introduction; (II) Mycoses of the skin; (III) Mycoses of the respiratory tract; (IV) "Madura foot" and chromoblastomycosis; (V) Systemic mycosis; (VI) Serology of pathogenic fungi; (VII) Fungus spores as allergens; and (VIII) Poisonous fungi. There are 8 plates, 8 sets of tables and 7 figures, some of the latter being devoted to line drawings illustrating details of the fungi concerned. Eight pages are devoted to a select bibliography.

In his preface the author points out that the book is not intended to be a systematic account of pathogenic fungi nor an aid to the diagnosis of mycoses. It sets out to provide an introduction to medical mycology using the principal mycoses infecting man to illustrate some general problems relating to the subject. It can be claimed that the author has achieved the aims as set out above. The ringworm fungi serve to illustrate taxonomy. In the section on mycoses of the respiratory tract the pathological significance of related fungi is dealt with.

The text throughout is written in an interesting style and the subject as a whole is well covered. The book is well printed and bound and there is a good index.

MOMBERG-JØRGENSEN, H. C. (1952). Pelsdyrsygdomme. **[Diseases of fur-bearing animals.]** pp. 152. Copenhagen: A/S Carl Fr. Mortensen. Kr. 25. **1105**

This very well produced and beautifully illustrated book deals briefly with the handling and anaesthesia of fur-bearing animals and in more detail with their diseases. General diseases affecting the various organ systems, deficiency diseases, intoxications, bacterial, virus and parasitic diseases are described in separate chapters.

A feature of the book is the illustrations, mostly photographs, with one coloured plate. Even those who cannot read Danish will find the illustrations informative.

A translation into English would be sure of a welcome.—M.C.

REIFENSTEIN, E. C., JR. [Director, Oklahoma Medical Research Institute and Hospital, Oklahoma City, Oklahoma. Edited by.] (1952). **Metabolic interrelations: with special reference to calcium. Transactions of the fourth Conference, January 7 and 8, 1952, New York. [Sponsored by the Josiah Macy, Jr. Foundation.]** pp. 262. New York: Josiah Macy, Jr. Foundation. $4.50. **1106**

Twenty short papers were presented at this conference and they and the discussions which they provoked are reproduced. The titles of the papers were:— Cartilage and bone matrix: chemical structure, formation, and destruction (Follis, R. H., Jr.); *In vitro* fibrogenesis of collagen (Gross, J.); Studies on the nature of protein in tendon and heart valves (Meyer, K); Studies on the nature of the protein components of bone (Hamilton, P. B.); The polysaccharides of mesodermal tissues (Meyer, K.); Radioautographic studies on S^{35}-labeled-sulfate sulfur metabolism in the articular cartilage and bone of suckling rats (Dziewiatkowski, D. D.); The ion-binding properties of cartilage (Neuman, W. F. *et al.*); Studies on the 'local factor' of calcification (Sobel, A. E.); The relationship of parathyroid extract to the phosphatases in kidney and in bone (Kochakian, C. D.); Studies on the relationship of the serum calcium level to parathyroid gland function (Howard, J. E.); Some recent facts about the properties of tricalcium phosphate and the composition of the bone salt (Dallemagne, M. J.); The crystal chemistry of francolite and its relationship to calcified animal tissues (McConnell, D.); Comments on the crystal chemistry of bone (Hendricks, S. B.); Dehydration studies with synthetic hydroxylapatite (Neuman, W. F.); Experimental data on the solubility of hydroxylapatite, especially that of the dental enamel (Ericsson, Y.); Solubility studies with synthetic hyroxylapatite (Neuman, W. F.); The location and the turnover of the sodium of bone (Edelman, I. S. *et al.*); Studies on radiophosphate exchange in bones of rats (Neuman, W. F.); The significance of the skeletal deposition of fluoride (Hodge, H. C.); Composition of teeth in relation to caries susceptibility (Sobel, A. E.).—M.C.

BARTON-WRIGHT, E. C. (1952). **The microbiological assay of the vitamin B-complex and amino acids.** pp. x + 179. London: Sir Isaac Pitman & Sons, Ltd. 18s. **1107**

This book, a complete revision and reassessment of the author's work published in 1946 in view of the great advances made in this subject in the last six years, is a valuable addition to the library of the biochemist. Arranged in three sections, part 1 gives a general survey of the development of microbiological assay and methods of procedure; part 2 is concerned with the microbiological assays of ten of the characterized members of the vitamin B-complex and

part 3 with the microbiological assays of amino acids. Vitamin B_{12} is not discussed. Each assay is described in detail. At the end of the book there are two appendices (1) cultural details for organisms used and (2) stock solutions, and author and subject indexes. Written in a clear style, the text is illustrated with organic formulae, tables and diagrams.

—E. Marsh Jones.

Vogel, H. (1951). Die Antibiotica. Grundzüge der Chemie und Physiologie der mikrobiellen Hemmstoffe. **[Chemistry and physiology of antibiotics.]** pp. xii + 528. Nuremberg: Hans Carl. DM. 38. **1108**

This is a book about the antibiotics, their nature, preparation, chemical and physical properties.

There are introductory chapters on the various micro-organisms—bacteria and fungi, then the main subject, antibiotics, is dealt with.

The ground is no doubt not covered completely, in view of the great efforts made in recent years to discover new antibiotics possessing infection-countering powers not possessed by the half dozen or so which have been adopted into materia medica; yet here is a review of a considerable amount of the work done. It cannot fail to instruct botanists, mycologists and other scientists occupied with this branch of science.—J. Edwards.

Greig, W. A. [Rowett Research Institute, Bucksburn, Aberdeenshire.] (1952). **Banham's The veterinary surgeons' vade mecum. Formerly Veterinary posology and other information.** pp. 216. London: Baillière, Tindall and Cox. 8th Edit. 17s. 6d. **1109**

There has been a lapse of nine years since the last revision of this well known publication which now appears under a new title. These nine years have been marked by unusually rapid advances in the field of therapeutics and materia medica which necessitated very extensive revision and considerable additions. Additions have been made to the list of drugs, but they are not so extensive as one would have expected. Omissions which have been noticed include the newer drugs for treatment of trypanosomiasis such as dimidium bromide and antrycide, and drugs for treatment of piroplasmoses, such as acaprin and pirevan, and chemotherapeutic agents for blackhead in turkeys and coccidiosis in poultry; the only antibiotic about which any information is given is penicillin and this is dealt with in half a page. Some of these may have been excluded on the grounds that their "value is not yet established" as stated in the preface, but many of them are widely used and information regarding them should be available to practitioners. The nomenclature of bacteria and viruses used is that of Bergey and British practitioners at home and overseas for whom the book is primarily intended will find many of these unfamiliar.

In a table concerning diseases caused by the Protozoa an attempt is made to indicate the geographical distribution of the various species, but this is very imperfectly done, for example, it would appear that neither *Babesia bigemina, Theileria mutans* nor *Anaplasma marginale* occur in the Indian sub-continent whereas they are very common and very important parasites in that region. Again, *Trypanosoma evansi* according to the table is confined to Asia whereas it is common to many parts of North Africa, the Sudan and Kenya. In this table the disease caused by *Trichomonas foetus* is given the most unpleasing name of "Trichomoniasic abortion and sterility". One hopes that this monstrosity will not find its way into the literature. *Babesia gibsoni,* an important pathogen of dogs in many parts of Asia, is omitted from the table.

In spite of these blemishes, there is a mass of facts and figures which practitioners frequently require and which are here conveniently presented and this new edition will be welcomed.—M.C.

Bague, J. (1951-52). Glosario de biologia animal (Español-Inglés). **[Spanish-English glossary of animal biology.]**—*Alm. Agric., Puerto Rico.* pp. 193-373. [In English and Spanish.] **1110**

This Spanish-English glossary is supplementary to the previously published English-Spanish one of 1948–50 [*V.B.* **21, 1558**] and is compiled on a similar plan. It comprises some 2,700 terms and has a bibliography of 20 references. Each term is clearly defined in both languages and Greek derivations are given in transliterated form. The English of this part is much better than that of the earlier publication. The two parts together should now form a very useful source of reference, not only for Porto Rican students for whom the glossary is intended, but also for English-speaking students and others who may have to cover literature on animal biology in the Spanish language.

—F.E.W.

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DISEASES CAUSED BY BACTERIA AND FUNGI, 1111-1199.

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List of Abbreviations

A.I.	— artificial insemination
ant.	— anterior
A.P.F.	— animal protein factor
approx.	— approximately
aq.	— aqueous
av.	— average
B.A.L.	— British anti Lewisite (2,3 dimercaptopropanol)
b.p.	— boiling point
c.f.	— complement fixation
clin.	— clinical
coeff.	— coefficient
conc.	— concentration
c.s.f.	— cerebrospinal fluid
diam.	— diameter
dil.	— dilute(d)
E.I.A.	— equine infectious anaemia
equiv.	— equivalent
ft.	— foot (feet) [measurement only]
Hb.	— haemoglobin
H.I.	— haemagglutination inhibition
inj.	— injection(s)
insol.	— insoluble
Inst. (inst)	— Institute
i/m	— intramuscular(ly)
i/p	— intraperitoneal(ly)
i/v	— intravenous(ly)
i/d	— intradermal(ly)
lab.	— laboratory (-ories)
max.	— maximum (-al)
N.D.V.	— Newcastle disease virus
N.D.	— Newcastle disease
r.b.c.	— red blood corpuscles
r.e.s.	— reticuloendothelial system
R.H.	— relative humidity
s/c	— subcutaneous(ly)
soln.	— solution
suppl.	— supplement(s) (-ary)
std.	— standard
temp.	— temperature
therap.	— therapeutic
U.V.	— ultra-violet
vet.	— veterinary
vol.	— volume
w.b.c.	— white blood corpuscles
wt.	— weight
/	— per (*e.g.* wt./vol. m.g./lb. body wt.)

The Editor will be glad to receive publications relating to Veterinary Science and cognate subjects in order that they may be dealt with in the *Veterinary Bulletin*.

Reports of Departments, Special Reports, reprints, etc., etc., should be sent as soon as they are issued.

Books for Review.

The Editor will be glad to receive books for review in the *Veterinary Bulletin*.